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All attempts to urge men forward, even in the right path, beyond the measure of their light, are impracticable; augment their light and they will follow of their own accord.—Robt. Hale.

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REPORT OF COMMITTEE ON METHODS OF CONTROL OF SMALLPOX*

(*Continued from the January issue.*)

II. CONTROL OF SMALLPOX IN RURAL DISTRICTS AND SMALL MUNICIPALITIES.

H. M. Bracken, M. D., Secretary and Executive Officer, Minnesota State Board of Health, St. Paul, Minn.

The control of smallpox in the rural districts and in the smaller municipalities is to be secured in the same way as in the larger municipalities, viz.: through vaccination. Smallpox can not be controlled without vaccination.

The public demands quarantine for this disease largely because it is a loathsome and disfiguring disease. We should not mislead the public by catering to their unjust demands. Public sentiment may be humored to a certain extent but those who are responsible for the control of this disease have no right to yield to the extent of misleading the people. The people should know that quarantine alone will never control this disease. Further, we have no right to throw a heavy expense on a municipality by quarantine of smallpox in an attempt to do that which we know can not be accomplished. Isolation is necessary to a certain extent but to give the public a sense of satisfaction or confidence in attempting to control the disease by isolation alone is a mistake. There are always a sufficient number of unrecognized mild cases, or concealed cases to keep the disease going, if we were depending for its control on quarantine or isolation rather than vaccination.

It is a common opinion that the infection of smallpox is air-borne for a considerable distance. This is a mistake. Like most other infections, this infection may be carried by articles of clothing, etc., but if the infection is to be passed from individual to individual there must be quite close and somewhat prolonged exposure. It is also a common opinion that the disease is carried by a second or intermediate person to a third person. This is not true. Individuals living in a house with a smallpox patient but not ill with the disease themselves will not spread the infection to others unless they have been in such close and prolonged contact with the patient as to have had a certain amount of the infectious agent attached to their clothing.

In fact, the spread of smallpox by a second to a third person may be treated as a negligible quantity in a well-vaccinated community. Public opinion is ready to demand great inconvenience for many individuals and great expense for the community, in order to prevent the spread of smallpox, when as a matter of fact, the disease may be controlled by the personal expense of vaccination only, or even no expense, for vaccination should be free to all those who wish to take advantage of the public vaccinators.

It is absurd for those of us who are entrusted with the education of the people in matters pertaining to preventable diseases to advise or even condone the use of illogical or unscientific methods in their control. Quarantine is a relic

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*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-second Annual Session, held at Los Angeles, June, 1911. *Jour. Amer. Med. Assn.*, Oct. 14, 1911, v. lvii, pp. 1279-1282.

of barbarism. It accomplishes nothing unless carried out in a most inhuman way and at great expense. One has but to recall the old shotgun methods used in attempts to prevent the spread of yellow fever before other means of control-

ling this disease were known, to realize the difference between quarantine and scientific control of disease. With our knowledge of vaccination, there is no more reason for trying to limit the spread of smallpox by quarantine than there is for continuing the shotgun method of controlling yellow fever now that we know the disease can be controlled by simpler methods.

I presume there are few, if any, present who do not believe in the preventive influence of vaccination against smallpox. Why, then, is vaccination not universal? Simply because ignorant or misinformed individuals have sufficient influence with

many State legislators to prevent the passage of compulsory vaccination laws or to secure their repeal when they already exist.

The leaders in the anti-vaccination movement have much to say about sore arms as the result of vaccination. We must admit that there are some sore arms following vaccination, but these are the result of infection, not of vaccination, and this infection, instead of furnishing argument against compulsory vaccination should be one of the strongest arguments in favor of it. Why? Because the more perfect the vaccination the less the liability of infection. Infection is due to the following: (1) impure vaccine; (2) faulty technic on the part of the vaccinator; (3) imperfect care of the vaccinated arm or leg after vaccination. With proper compulsory vaccination laws, all of these possibilities would be reduced to a minimum.

We often vaccinate in emergency—that is, when there is a smallpox scare—or we vaccinate just before the opening of school in the fall, the very worst time of the year. A great part of our vaccination is done, therefore, under the most undesirable conditions. If we had compulsory vaccination laws, any State could determine very closely the amount of vaccine that its public vaccinators would need each year, for this would be governed by the number of births, and the production of vaccine would then be carried on under the most favorable conditions. When vaccine producers do not know how much of their product will be needed they may be short in their supply when the heavy demand is made on them in emergencies, and then be compelled to produce vaccine for rush orders or in hot weather. If we had compulsory vaccination, the children would be vaccinated at the most advantageous period of life, viz.: the cradle age, instead of during the school age. In the countries having compulsory vaccination laws there is no active vaccination carried on during the two or three hottest months of the year. In our country, where we try to secure vaccination through the vaccination of school children, we do the greater part of the work in September, one of the most undesirable months of the year so far as the vaccine is concerned and one of the months which is most conducive to arm infection after vaccination because of the heat and dust. If we had compulsory vaccination laws, with well-trained vaccinators to take care of the poor, we would not run so great a risk as we do now of having sore arms.

Although the influence of demagogues and misguided individuals is often greater with legislators than is that of scientific leaders, the need of educating the people as to the control of smallpox by vaccination rather than by quarantine is imperative, and it seems to me the method adopted in Minnesota in 1908 is worthy of consideration. This consists in (1) placing a premium on vaccination by allowing the vaccinated privileges not granted to the unvaccinated, and (2) refusing to endorse the expenditure of considerable sums of money in an attempt to control the disease by rigid quarantine. It is well known that certain communities that have tried to control smallpox by quarantine have failed, and have been compelled to go back to the old system of vaccination as a means of protection. Vaccination is a small expense to the individual.

I wish to emphasize the fact which I have already stated, that quarantine is simply a relic of barbarism. There are only a few diseases that are now under quarantine regulations and most of these are diseases in which quarantine was chosen as the means of control before anything was known as to the cause of the disease. Fortunately, in most instances in which the cause of the disease has been discovered, scientific methods for its control have been adopted and rigid

quarantine abandoned. Take yellow fever as an example. A few years ago an outbreak of yellow fever demoralized commerce and interfered with the carrying out of the general intercourse of the community, but when it was found that the infected mosquito was the only means of transmission the old system of quarantine was thrown down.

ABSTRACT OF DISCUSSION.

(On Reports of Drs. Spalding and Bracken.)

Dr. E. Stuver, Fort Collins, Colo.: I am highly pleased that so distinguished an authority as Dr. Bracken takes the stand that he does on the question of quarantine. The world has been scourged with smallpox; between the years 1700 and 1800, one hundred millions of people died in Europe from smallpox; and Macauley tells us that at one time scarcely a person could be found in London who was not marked or disfigured by that disease. Since Jenner discovered vaccination, no one who does not want smallpox need have it. What does quarantine do? It gives us a wall behind which the anti-vaccinationists can hide; they cry to the public, "Isolate cases of smallpox"; and they can shoot into the scientific world with the material that they collect from all sources and keep up a battle of that sort; whereas, if we turned our smallpox patients loose, we would soon see those people taking to the woods. They would get vaccinated. As shown by the epidemic in England, and especially when the thing came very close home, the anti-vaccinationists got vaccinated, and they didn't take smallpox.

Swallowing the virus does not work out in the presence of real danger. It will do when the smallpox is in some other county. The principal thing that we want to impress on our communities is the fact that vaccination does prevent smallpox. We had an epidemic in our small town last spring; our health officer made a report in April that at that time we had fifty-eight cases of smallpox; fifty-three patients had never been vaccinated at all, and the remaining five persons who contracted smallpox had not been vaccinated within fifteen years. No person in the community who had been properly or efficiently vaccinated took smallpox. People will come to the physician and try to argue the question of vaccination. I tell them: "I don't care whether you get vaccinated or not; it is a good deal more in my pocket if you don't get vaccinated. As far as myself and my own family, and people whom I have to look after, are concerned, I vaccinated them. You can use your own judgment. It is your great American privilege to be vaccinated or not; do as you please." They yield gracefully in nearly every case. If you argue the matter they will keep you tired for a week, and probably then not be vaccinated.

The question of sore arms, I believe, depends on the person one is dealing with. I have explained it something like this: Some are absolutely immune against the disease. Vaccination will not "take" on them under any circumstances. There is another class who are highly immune. They have mild sores; the manifestations are mild and they soon recover. There is the ordinary case that runs an ordinary course; there are no severe symptoms and the person soon recovers. There is a fourth class, who have quite a strong susceptibility to the vaccine poison; and those persons get quite sore arms and become quite ill from vaccination. A large percentage of this latter class would die from smallpox. In the fifth class are persons who are exceedingly susceptible to the poison of smallpox, and when attacked they die. An explanation of that kind made to the public sometimes clears up the atmosphere and shows that the reason some people

have very sore arms is because they are exceedingly susceptible to the smallpox virus, and if they took smallpox they would surely die from it.

Dr. J. N. Hurty, Indianapolis: I heartily agree with Dr. Bracken in every respect except one. He said that quarantine and isolation (I don't know the exact differentiation or distinction between the two) are barbarisms.

Dr. H. M. Bracken, St. Paul, Minn.: Quarantine only.

Dr. J. N. Hurty, Indianapolis: Quarantine only is a barbarism. Well, perhaps it is, but I would advocate very strict isolation of a certain class of diseases (with which you are all acquainted), if not quarantine; yet we permit their victims to run loose in this world uncontrolled in any way whatsoever. I refer to tuberculosis and the venereal diseases. We are inconsistent in the way in which we conduct our affairs, both public and private; and this is one of the most glaring inconsistencies that I know of—that we should permit persons infected with the most terrible leprous diseases to go about unchallenged in any particular whatsoever. They are more dangerous than smallpox victims, a thousand times more dangerous. Yet we are all aroused, ready to pay great sums of money for the quarantine and isolation of the smallpox person but not for the other. So I would advocate the retention of quarantine and isolation to some degree, because such methods are not barbarisms entirely. Then there is another point in regard to smallpox which Dr. Bracken did not mention. Shall we any longer class it as a dangerous disease? It is less dangerous in my State than measles. We have reported at this time about 300 cases of smallpox every month and not a single death. Inquiry was made into the reports for three months, and none of the cases was severe. Physicians were everywhere disputing whether it was smallpox or not. I think it was; but it was so mild that the element of danger did not enter into it.

Dr. H. M. Bracken, St. Paul, Minn.: A distinction should be made between quarantine and isolation. By quarantine we should mean rigid restraint of infected individuals and those associated with them. Isolation means only the separation of the patient with little or no restraint on the movements of other members of a family. I believe thoroughly in the isolation of many diseases, such as measles, epidemic anterior poliomyelitis, typhoid fever and smallpox; and I would be glad to see the day when certain other diseases now in the quarantinable group were put into the group of diseases for which isolation is recognized as sufficient. In Minnesota the death rate from smallpox is less than 0.5 per cent. I do not remember the exact death-rate for measles and scarlet fever, but it is considerably higher than that for smallpox.

The office is in receipt of some very nice sanitary drinking cups of the flat kind made from one piece of paper so folded as to make a nice conical cup when opened. You handle it pretty much all over, inside and out, before you get it ready for a drink. But it is individual, and it is not common, and that takes the curse off.

Those who deny the existence of hydrophobia had better be muzzled.

BOVINE UNCINARIASIS

(HOOKWORM DISEASE; SALT-SICK)

(Abstract from Bulletin No. 86 Florida Agricultural Experiment Station, by same author.)

By Charles F. Dawson, M.D., D.V.S.,
Veterinarian State Board of Health.

Salt sick is usually confined to regions where the predominating soil is light, sandy, more or less unproductive of nutritious grasses, and where ponds and sluggish streams abound. It has not, as yet, attracted sufficient attention on the part of the veterinarian for its geographical distribution to be precisely known. It is said to occur on Cape Cod peninsula; in certain counties in Southern Texas; and the writer has found it in nearly all parts of Florida, in which State it is considered a menace to the cattle industry.

The adult *Uncinaria radiata* which produces salt sick appears to the naked eye to be about one-half to five-eighths of an inch in length, and about the thickness of an ordinary pin. One end, the head, is curved, or is hook-shaped. The curve is toward the ventral surface.

As with most parasitisms, conditions or environment which lower the vitality of an animal favor the invasion of the animal by parasites. Hence we find uncinariasis most prevalent in Florida in those months when the pastures are poorest, and when the unprotected animals have been exposed to the devitalizing influence of cold nights. Sometimes the disease sets in in animals which are supporting uncountable numbers of the cattle tick, which as is now known produces Texas fever. Occasionally a cow that has had trouble in calving will "go into the sick."

The disease is most common in wild range animals because they do not receive the care and attention that is given to good cattle. The more delicate strains of cattle, such as the Jersey, seem quite susceptible, when improperly cared for. Northern cattle, brought into Florida and contracting Texas fever in a chronic form, are likely to be lost by an incidental invasion of the hookworms before they can recover from the effects of the fever. Early weaning of calves, which predisposes to digestive disorders, also invites an attack of hookworm disease.

The first symptom is perversion of appetite. The animal refuses the customary ration or some parts of it, usually the more nutritious grain. It nibbles at, and seems to crave earth, sand, bone, wood, rags, and other indigestible substances. There is a low bellowing, grinding of the teeth, some dribbling of saliva. The disease is so insidious in

its development that it is difficult to say just when it started in. As the disease progresses emaciation and diarrhœa set in. The dejecta are thin and watery, of a dark brown color and of a disagreeable odor. The under surface of the tail, escutcheon and thighs become soiled. The visible mucous membrane of the anus is reddened and there is straining and defecation whenever the animal moves about; hence they are found much of the time standing motionless, "tucked up," with head and neck extended. There is a fever of two or three degrees in the early stages. As the anemia progresses, the diarrhœa is succeeded by bloating or tympanites, constipation, and the symptoms attendant upon extreme anemia, such as dropsical accumulations in the chest, abdomen and between the lower jawbones. The eyes are lusterless and sunken. The hair is rough and on end. The gait is unsteady, particularly in the hind legs; the venous pulse is plainly perceptible in the neck or jugular veins, while the arterial pulse is hard to determine. The mucous membranes of the mouth and eyes are extremely pale and bloodless. In some cases the eyeballs recede to such an extent that the conjunctival membranes are protruded and appear as a white ring of fat around the margins of the lids.

By preventing grazing or feeding with the herd, the spread of the disease may be checked. Burying the carcasses would also prevent it from doing further harm. If a whole herd of cattle is infested, a change of pasture becomes advisable. The infested pasture could be used by animals not susceptible to this species of *uncinaria,* such as horses, hogs, and sheep, or it could be cultivated and planted to crops. The removal of the animal from a damp pasture containing ponds or streams to a high, dry one, would result favorably; or, change from an infested pasture to one on which no sick animals had been for several months, would do as well, since the larvæ can not become adults outside the body, and must, in the natural order of things, die out, in time.

Treatment consists in removing the cause of the disease, preventing re-infection, and in trying to build up the system. Unfortunately, in many cases, the animal is so "run down" that it is too weak to withstand the action of sufficiently large doses of worm medicine, and thus the first indication for treatment, removal of the cause, is often the stumbling block to success. The second indication, that of preventing re-infection, can be easily accomplished in farm cattle, and has already been discussed. The third indication may be accomplished by the administration of tonic remedies.

Thymol is used as a specific for this disease in man, and would, no doubt, prove efficient in the lower animals. It could be used in the following way: Give fifty grains of thymol in one pint of a one per cent. solution of coal-tar creosote at eight o'clock in the morning and another dose at noon. At four o'clock in the afternoon give a purge consisting of one pound of Epsom salts, tablespoonful of ground ginger, 2 drams of nux vomica, dissolved in a pint or more of water, as a drench. Reduce all these doses one-half for yearlings and to one-fourth for calves.

As tonic powders for adding to the feed or administering by hand, I have used with some degree of success the following:

Carbonate, or sulphate of iron	3 ounces.
Bicarbonate of sodium	3 ounces.
Pulverized ginger root	3 ounces.
Powdered capsicum	1 ounce.

Mix and divide into twelve equal parts. Give one powder three times a day, in the feed or upon the tongue.

Constipation is a prominent symptom in the later stages of the disease, and this is to be controlled by green feed, if obtainable, or by feeding linseed meal, or by the daily administration of laxative doses of Epsom salts. Give the salts in two- or three-ounce doses combined with an ounce of common salt and a teaspoonful of ground ginger in a pint of syrup, as a drench, until the desired effect is obtained.

In the case of range cattle, or cattle that cannot, for various reasons, be medicated by hand, the foregoing treatment is not applicable. All that can be done in the way of treatment is to place salt-licks on the range at the watering place, and to change the pasture. The lick may contain any proper medicines that the animals will lick. The following formula for a salt-lick is recommended:

Sulphate of iron, pulverized	1 part, by volume.
Common salt	4 parts, by volume.
Bicarbonate soda (baking soda)	2 parts, by volume.
Plaster of paris	4 parts, by volume.

Mix these ingredients thoroughly, and carefully add sufficient water to make a mass like wet sand. Place the mass in shallow boxes and tamp down hard, to "set." Place the licks at accessible points where they will be protected from rain.

COMPARATIVE COST OF DIGESTIBLE NUTRIENTS AND ENERGY IN DIFFERENT FOOD MATERIALS, BASED ON AVERAGE PRICES OF THE DAY

(It is estimated that a man at light to moderate muscular work requires about 0.23 pounds of protein and 3,050 calories of energy per day.)

Kind of food material.	Amounts for 10 cents.					
	Price per pound.	Total weight of food material.	Protein.	Fat.	Carbohydrates.	Energy.
	Cents.	*Lbs.*	*Lb.*	*Lb.*	*Lbs.*	*Calories.*
Beef, sirloin	25	0.40	0.06	0.06	.....	410
Do	20	.50	.08	.08	.....	515
Do	15	.67	.10	.11	.....	685
Beef, round	16	.63	.11	.08	.....	560
Do	14	.71	.13	.90	.....	630
Do	12	.83	.15	.10	.....	740
Beef, shoulder clod	12	.83	.13	.08	.....	595
Do	9	1.11	.18	.10	.....	795
Beef, stew meat	5	2	.29	.23	.....	1,530
Beef, dried, chipped	25	.40	.10	.03	.....	315
Mutton chops, loin	16	.63	.08	.17	.....	890
Mutton, leg	20	.50	.07	.07	.....	445
Do	16	.63	.09	.09	.....	560
Pork, smoked ham	22	.45	.06	.14	.....	735
Roast pork, loin	12	.83	.11	.19	.....	1,035
Do	18	.56	.08	.18	.....	915
Pork, fat salt	12	.83	.02	.68	.....	2,950
Codfish, dressed, fresh	10	1	.11	.....	.....	220
Halibut, fresh	18	.56	.08	.02	.....	265
Cod, salt	7	1.43	.22	.01	.....	465
Mackerel, salt, dressed	10	1	.13	.20	.....	1,135
Salmon, canned	12	.83	.18	.10	.....	760
Oysters, solids, 50 cents per quart	25	.40	.02	.....	.01	90
Oysters, solids, 35 cents per quart	18	.56	.03	.01	.02	125
Lobster, canned	18	.56	.10	.01	.....	225
Butter	20	.50	.01	.40	.....	1,705
Do	25	.40	.....	.32	.....	1,365
Do	30	.33	.....	.27	.....	1,125
Eggs, 36 cents per dozen	24	.42	.05	.04	.....	260
Eggs, 24 cents per dozen	16	.63	.07	.06	.....	385
Eggs, 12 cents per dozen	8	1.25	.14	.11	.....	770
Cheese	16	.63	.16	.20	.02	1,185
Milk, 7 cents per quart	3½	2.85	.09	.11	.14	885
Milk, 6 cents per quart	3	3.33	.11	.13	.17	1,030
Wheat flour	3	3.33	.32	.03	2.45	5,440
Do	2½	4	.39	.04	2.94	6,540
Corn meal	2½	4	.31	.07	2.96	6,540
Wheat breakfast food	7½	1.33	.13	.02	.98	2,235
Oat breakfast food	7½	1.33	.19	.09	.86	2,395
Oatmeal	4	2.50	.34	.16	1.66	4,500
Rice	8	1.25	.08	.....	.97	2,025
Wheat bread	6	1.67	.13	.02	.87	2,000
Do	5	2	.16	.02	1.04	2,400

Kind of food material.	Amounts for 10 cents.					
	Price per pound.	Total weight of food material.	Protein.	Fat.	Carbohydrates.	Energy.
	Cents.	*Lbs.*	*Lb.*	*Lb.*	*Lbs.*	*Calories.*
Wheat bread	4	2.50	.20	.03	1.30	3,000
Rye bread	5	2	.15	.01	1.04	2,340
Beans, dried	5	2	.35	.03	1.16	3,040
Cabbage	2½	4	.05	.01	.18	460
Celery	5	2	.02	.....	.05	130
Corn, canned	10	1	.02	.01	.18	430
Potatoes, 90 cents per bushel	1½	6.67	.10	.01	.93	1,970
Potatoes, 60 cents per bushel	1	10	.15	.01	1.40	2,950
Potatoes, 45 cents per bushel	¾	13.33	.20	.01	1.87	3,935
Apples	1½	6.67	.02	.02	.65	1,270
Bananas	7	1.43	.01	.01	.18	370
Oranges	6	1.67	.01	.....	.13	250
Strawberries	7	1.43	.01	.01	.09	215
Sugar	6	1.67	.....	.....	1.67	2,920

—From Nelson's Encyclopaedia.

THE BUZZARD AND HOG CHOLERA

The Times-Union in an editorial raises the question as to whether buzzards actually feed on hogs that have died of cholera. The main point at issue being do buzzards transmit the disease?

From time out of mind it has been assumed that they do. But so far as we are aware, it is assumption only. There is experimental evidence upon the matter. It may indeed be like some of our other assumptions, for example, yellow fever. It was long assumed that that disease was transmitted by fomites. And there was plenty of evidence (?) to support the assumption, if all the stories about how it got started here and there are to be believed.

It is worthy of remark in passing that yellow fever and hog cholera are alike in that the specific cause, the germ, is not known in either case. They are further alike in that the blood of the sick injected into the well will produce the disease. They are further alike in that the blood of the sick can be passed through the finest filter (a filter that will filter out the finest known germs) and still produce the disease. They are further alike in that only man is susceptible to yellow fever, and only hogs to hog cholera.

It might be worth while to suspect that they are alike in being insect borne, and look for the insect. Hogs have fleas, and fleas trans-

mit plague. Hogs have lice, and lice transmit typhus fever. Hogs are bitten by mosquitoes, and mosquitoes transmit malaria and yellow fever, and filariasis, and possibly dengue, and certain diseases among birds; and hogs are bitten by biting flies, as horse flies, and one at least is reported to transmit a certain disease among cattle, and so on.

Maybe there is some evidence that will exclude some or all of these channels of infection, and maybe there is some more that will fasten it upon the buzzard.

This much is certain: the disease is wide spread; the losses sustained on account of it are enormous; the difficulties in the way of controlling it even with hog cholera serum at our command are almost insurmountable; any new information that would tend to greater efficiency in its management would be hailed with delight.

FOR THE UNVACCINATED

There were 480 cases of smallpox at the Duval County Antivaccination Hospital last year.

Two of them died.

There were 85 cases out there at one time. That was some scab.

A case picked up in a meat market today. Are you a vegetarian? Another taken off a vegetable wagon. Better get vaccinated.

One case died at the Antivaccination Hospital night before last. That wasn't so mild.

Some say they would rather have smallpox than to get vaccinated. Every one to his own taste, as the old lady said when she kissed the cow.

THE WAY IT LOOKS TO A MA N UP ATREE

That with so many health and benevolent organizations in the country, some of them must die of starvation.

It only costs six and a half cents for enough vaccine to protect a two-hundred-pound man against smallpox, while it costs almost two dollars for enough hog cholera serum to protect a two-hundred-pound hog. But with boiled ham at fifty cents a pound, better have smallpox and save the hog.

But doesn't smallpox exercise fine discrimination? It just seems to know every time which have been vaccinated and which haven't.

TUBERCULOSIS ORGANIZATIONS

Nearly 2,000 organizations of various kinds were engaged in the fight against tuberculosis on January 1, 1912, and new agencies have been formed during the past year at the rate of about one a day, according to a statement issued today by The National Association for the Study and Prevention of Tuberculosis.

These anti-tuberculosis agencies include 618 associations and committees; 451 sanatoria, hospitals and camps; 365 dispensaries and clinics; and 91 open air schools. If to these were added 200 State and local boards of health and a number of other institutions, such as hospitals for the insane and penal institutions making special provision for tuberculosis cases, the total number of agencies engaged in tuberculosis work would be swelled to nearly 2,000.

During the year 1911 the greatest percentage of increase among the different forms of tuberculosis work was among the open air schools for anemic and tuberculous children. On January 1, 1911, there were only 29 open air schools in operation or provided for in the entire country. On January 1, 1912, there were 91, an increase of 214 per cent. Sixty-two new schools have been established or provided for this past year. This entire number of open air schools has been established since January 1, 1907.

On January 1, 1905, there were about 150 different agencies engaged in anti-tuberculosis work, of which number 111 were sanatoria. The increase to over 2,000 agencies has emphasized, the National Association points out, the importance of the campaign for the prevention of consumption being carried on in all parts of the country. The following table summarizes the growth of the anti-tuberculosis movement in each line of activity for each year since 1905:

	Year	Associations	Sanatoria and Hospitals	Dispensaries	Open Air Schools
Established before	1905	18	111	18	
" during	1905	15	18	6	
" "	1906	18	16	14	
" "	1907	46	30	45	1
" "	1908	109	45	118	2
" "	1909	167	67	59	10
" "	1910	117	68	62	16
" "	1911	128	96	43	62
Total (January 1, 1912)		618	451	365	91

Those who don't believe in vaccination should not be vaccinated. Save the vaccine and buy hog cholera serum.

Dr. Warren E. Anderson, of Pensacola, died at his home, after some months' illness, on February 1st.

Dr. Anderson was a native of Florida, born at Marianna February 16, 1857.

When twenty-three years old he entered Mobile Medical College, from which he graduated in 1882. Two years later he moved to Pensacola, where he remained till his death.

In 1889 he married Miss Catherine Hargis, daughter of the later Dr. Whiting Hargis, who, with eleven children, survives him.

Dr. Anderson was a member of the State Board of Health from 1901-1905, and at the time of his death was the representative of the State Board of Health in Escambia county—a physician loved and honored by all.

He was a man, take him for all in all;
I shall not look upon his like again.

Dr. J. Frank Curtis, agent of the State Board of Health for Baker county, died at his home in Macclenny January 22d.

Dr. Curtis was fifty years old, and had lived in Macclenny during the last fifteen years.

He leaves a wife and one daughter, besides a host of friends to mourn his loss.

CHANGES IN PERSONNEL

December 18, 1911. Dr. Roy E. Chalker, of Lake City, appointed agent of the State Board of Health for Columbia county.

February 5, 1912, Dr. E. S. Estes, of St. Augustine, resigned as agent of the Board for St. Johns county. Appointment of successor to be announced later.

February 6, 1912, Dr. J. Harris Pierpont, of Pensacola, appointed temporary agent of the State Board of Health for Escambia county, vice Dr. Warren E. Anderson, deceased. Permanent appointment to be made at 1912 annual meeting of the State Board of Health.

February 7, 1912, Dr. B. V. Elmore, of Blountstown, appointed agent of the State Board of Health for Calhoun county.

February 16, 1912, Dr. E. F. Brown, of Macclenny, appointed agent of the State Board of Health for Baker county, vice Dr. J. Frank Curtis, deceased.

Scientists tell us that only certain kinds of mosquitoes can become infected with malaria. Now isn't that strange?

Not a bit. Only certain kinds of people can become infected with smallpox—the unvaccinated.

FLORIDA

Health Notes

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POLICIES IN THE MANAGEMENT OF COMMUNICABLE DISEASES

(Extract from the Twenty-third (1911) *Annual Report of the State Health Officer of Florida.)*

With an everchanging knowledge and ever accumulating experience, it sometimes becomes necessary to change policies in the management of communicable diseases, and to base the policies of the Board on practical and tried out methods rather than on theoretical conclusions. For instance, with the advent of our knowledge that yellow fever is transmitted by mosquitoes, it was necessary to rearrange the entire scheme of management in accordance with that fact. Some of our information is based upon bacteriological investigation and some upon epidemiological studies, for very often the conclusions arrived at by bacteriological study and by epidemiological study greatly vary. For example, Dr. Flexner and others found in the nose of a child suffering from infantile paralysis something which, when injected into a monkey, will produce symptoms of that disease, thus bacteriologically indicating that the disease is transmitted by nasal secretions and that it is transmissible. On the other hand Lebredo and Recio,[1] of Cuba, studied 140 cases of infantile paralysis in the province of Santa Clara, Cuba, and in no instance did they find more than a single case in a family, notwithstanding the fact that the Cubans for the most part generally have large families, and, further, notwithstanding the fact that no attempt was made to limit communication between the sick and the well. Similarly in the State of Washington, 397 cases were studied by Kelly, Gellhorn and Manning,[2] and in only eight instances was it found that two cases occurred in a family, and in no instance more than two.

These observations are in keeping with the observations generally made upon the occurrence of the disease in Florida.

It is the policy of some boards of health to base management upon laboratory findings, and thus it happens that in New York city infantile paralysis is quarantined for a period of six weeks. In other boards it is the policy to give a little more weight to epidemiological findings, particularly when they do not coincide with bacteriological findings, and this is the position assumed by this office, for, notwithstanding the bacteriological findings to the contrary, it would seem to the State Health Officer of Florida that he would be hardly justified in throwing any restrictions around the sufferer from infantile paralysis, especially since it is a rule of the disease, to which there have been few exceptions, that but only one person in a family had suffered from it.

It might be added that there is a growing unrest as to whether land quarantine is ever justifiable. It has certainly never justified itself as applied to measles or whooping cough, and has consequently been abolished almost everywhere where it has been instituted, with indifferent results as to whether quar-

[1]Lebredo, Dr. Mario G., and Recio, Dr. Alberto. Acute anterior poliomyelitis. Cuban epidemic of 1909. *In* Sanidad y Beneficencia, Havana, Cuba, April, 1910, vol. iv., (4), pp. 328-357.

[2]Report of Infantile Paralysis in the State of Washington, during 1910, by Eugene R. Kelley, M. D., Assistant State Health Commissioner; Walter Gellhorn, M. D., and John B. Manning, M. D., pp. 69. Olympia, Wash., 1911.

antine is or is not maintained. The same thing is true of smallpox, particularly in the Southern United States where the disease often manifests itself in such mild form, and it might be said rarely manifests itself except in mild forms; and this is equally true of scarlet fever. On account of the very mildness of these diseases a great many, frequently the majority of the cases, are entirely overlooked, and no quarantine restrictions whatsoever thrown around them, and it is just such cases that keep the disease spreading regardless of quarantine.

In other words, it is exceedingly problematical whether quarantining one-fourth to one-half of the cases of a disease (those cases which are reported to boards of health) and leaving the other three-fourths to one-half (mild, unrecognized cases) going unhampered and without any restrictions whatsoever, is justifiable, for it is doubtful if such quarantine restrictions have any restraining influence upon the spread of the disease.

(Extract from the Report of Dr. Hiram Byrd, Assistant State Health Officer, as office assistant during 1911, *to the State Health Officer of Florida.)*

QUARANTINE.

As office assistant it has been my province to meet face to face all the communicable diseases encountered in the State; to study their epidemiology; to try out the accepted theories as to management, and to explain the failures, which, I regret to say, have been uncomfortably numerous.

It is my purpose to specify in this connection some of the failures and the wherefores, with the view of, as far as possible, adjusting the machinery between expenditures and results, so that each dollar expended in the interest of the public health will be expended to best advantage; for it is a belief of this office that only one thing in the world justifies expenditures in the interest of public health, and that is *results.* It is a further belief that all public health moneys should be expended so as to produce maximum results. I want to elaborate this just a little, for it is one feature that is perhaps most frequently lost sight of even by business men. Remember, first of all, that the primary object of a health department is to prevent sickness and premature death. That is the thing to be reckoned as results—nothing else. If it fails there it has no excuse for existence.

All health departments have less money than they could use to advantage. Hence it behooves them to expend it where most needed and where it will do most good in preventing sickness and death. If a thousand dollars expended on trichinosis will prevent one death, and a thousand dollars expended on hookworm disease will prevent a hundred deaths, where should the expenditure be made? That is the true test in all public health management. *Expend all moneys where they will do most good* should be the policy of every board. To expend money where it does not do the most good is not only a waste of money but it is a wanton waste of human life—it permits two to die of this disease to save one from that.

Measured by the amount of sickness they cause and the number of deaths, we have in this State four major diseases: tuberculosis, hookworms, malaria, and typhoid fever. The rest are of very minor importance compared with these. To be sure, there are yellow fever, bubonic plague and Asiatic cholera that might

be introduced at any time and would become veritable scourges for the time, but two of these possible diseases we have never had as yet, and we are pretty well fortified against the introduction of all three. Our operations are, therefore, largely confined to those that are forever with us, but ever maintaining a watchful attitude toward the others. And as before stated, of those with us there are two groups: a major group consisting of the four diseases mentioned and a minor one consisting of all the rest.

The funds of the board have been expended in maintaining an executive office, and a field force for the investigation and management of communicable diseases, and a system of laboratories to aid in diagnosis, and a system of publications to educate the people along public health lines, and a system of lectures to push the education still closer home, and this is, after all, the place where the board reaches its maximum of usefulness. These are the things that are of permanent value.

But in addition to this, and in addition to the diseases of domestic animals, the board has expended money in three other directions, namely:

Therapeutics:

The treatment of hookworm disease has been continued. This is one of the major diseases encountered in the State and until its ravages are checked we can never have a high state of public health. Results of treatment are fairly satisfactory, and it is believed that money expended in this work yields handsome returns in improved health.

Immunization:

Against smallpox, hydrophobia, diphtheria and tetanus. These are all minor diseases, but the best money ever expended in the interest of public health is immunization money. It yields greater returns, dollar for dollar, in the prevention of disease and premature death than anything else.

One of the major diseases, typhoid fever, is now on the list that can be prevented by immunization, and it is hoped that the board can see its way clear to authorize it.

Hospitalization:

Only two diseases have been hospitalized during the year, or rather partially so, namely, smallpox and leprosy.

NOTE—Quarantine, in the sense that guards are employed, has long since been abandoned. Persons suffering from quarantinable disease are subject to prosecution after their recovery if they have violated the regulations of the board, and should be reported to the prosecuting attorney by any one having cognizance of the fact. This is a legal quarantine, and if not observed, is to be treated as any other infraction of law.

Guard service in the management of smallpox was discontinued about eight years ago. It was upon the falling tide. Smallpox runs in tides some ten or twelve years apart. We had a gradually rising tide from 1895 to 1900 when it reached its maximum, then gradually fell to 1909 when there were only twenty-four cases in the entire State for the year. In 1910 it started on an upward sweep again, reaching its maximum so far in 1911. It is believed that it is on the decline and that during the year 1912 there will not be as many cases as last year. *It is*

not to be overlooked that guard service was discontinued about 1903-4, *and still the prevalence of smallpox subsided, reaching low ebb five years after guarding had ceased.*

I have pointed out that smallpox is one of the minor diseases in this State. That statement must needs be somewhat amplified. Last year (1911) there were 482 cases at the Anti-vaccination Hospital near Jacksonville. Of these only two died. Had it been 482 cases of measles there would have been at least eight or ten deaths; in 482 cases of whooping cough there would have been at least fifteen or twenty deaths; and yet no one thinks of these as serious maladies; no one thinks of quarantining them. The year was the heaviest smallpox year in the history of the State, and yet the total number of deaths in the entire State from the disease was less than the deaths from whooping cough in a single city. I repeat, that measured by the amount of suffering or the number of deaths that it causes, smallpox cannot but be grouped with the minor diseases of the State. I am not forgetful that a severe case of smallpox causes untold agonies, even death, but at the same time, it is to be remembered that for one such case there are some fifteen to twenty cases that suffer very little, never go to bed, never call a physician, never suspect that they have smallpox at all.

And herein lies the weakness of isolation. It is easy to say, "Isolate all the cases and that will stop the disease." It is true, isolation of all the cases would stop the disease.

But before they can be *isolated* they must be *found.* And no system yet devised has succeeded in finding more than about one-half the cases. Isolate these ever so carefully, but the disease still spreads, because one-half the cases are at large with no restrictions whatever thrown around them.

The difficulties in the way of finding all the cases of smallpox are of three kinds:

1. Failure on the part of the attending physician to diagnose the disease.
2. Failure on the part of the patient to call a physician.
3. Secreting the disease to keep from being quarantined.

It is no reflection on the physician that he fails to see smallpox in the benign eruption that often presents itself to him. Even those with most experience often fail. No longer ago than this week[1] the attending physician, the City Health Officer of Jacksonville, the State Health Officer and myself, all saw a certain patient, and all made the same mistake in diagnosis. There is another disease so like smallpox that no amount of knowledge or experience will enable the physician to always distinguish with certainty which it is—smallpox or chickenpox.

Besides, it is during the first two or three days of smallpox that the mild case suffers most; it is during these two or three days that he calls a physician if he calls one at all; and during these two or three days the eruption has not shown itself. This is no inconsiderable source of error.

But more frequently the patient never calls a physician. He assumes that his sickness is transient and that he will recover, and that decides him not to call a doctor at all. These cases are of course never reported.

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[1]January 23, 1912.

Then a considerable number of cases wilfully and maliciously conceal the fact that they have the disease, in order to keep from going to the pest-house or being isolated. I have found cases in hiding many and many a time; found one case concealed in the house between the mattress and springs; found one case in the attic; have found them slipping from house to house; have found them in the swamp; have found them in the barn. They could be prosecuted perhaps, but that would not undo the damage already done.

So the man of practical business sense asks and asks again what good it does to quarantine half the cases while the others go scott free. The only thing that can be said in defense of such a hit-and-miss procedure is that the people expect it and won't be happy without it. They expect it because it has always been done. And it is done because they expect it. Here is, as we say in medicine, a vicious circuit. It is the line of least resistance. It is easiest to follow. But the question is: Do results justify it? Is it expending money to best advantage? Or is it sacrificing two lives there to save one here?

The answer to that question is not far to seek. There are three eruptive diseases that are very parallel: smallpox, measles and scarlet fever. They are transmitted, so far as we know, in the same way; they are about equally contagious, and in the past have been about equally virulent. An equal number of cases in the State now would be followed by an almost equal number of deaths, measles perhaps giving the greatest number and smallpox the smallest. For all practical purposes the diseases are fairly analogous. It is about equally difficult to diagnose all cases in one as in another of the three. There are as many mild cases in one as in another, as many cases that go unrecognized, and consequently always spread the disease.

Barring vaccination in the case of smallpox, the difficulties attending the control of one is about the same as those attending the control of the others. But, in point of management, the three diseases have been managed along three different lines. Vaccination has influenced the management of smallpox; scarlet fever has always been quarantined; and measles have been quarantined at some times and in some places. Here we have, then, three diseases in all epidemiological characters exactly alike, but all of which have been managed along different lines. This gives us a complete line on the efficiency of any of the three methods of management. We have only to compare the results of one management with the results of another, and we can see exactly what the management has amounted to. We can compare the most efficient quarantine possible, as in scarlet fever; with no quarantine at all, as in measles, and see just exactly how much or how little good quarantine does.

Let us see. Scarlet fever is quarantined throughout the State. Measles is not quarantined at any point in the State. The net results are that *so far as we are able to judge from the incomplete returns, and from all other available data, the one is just about as prevalent as the other.* At times this one is in the ascendency, at other times that one. In places the one, in other places, the other. In spite of scarlet fever being quarantined (very poorly, I admit, but the best possible), it is as prevalent as measles. In spite of measles going scot free, without any restrictions whatsoever, it is no more prevalent than scarlet fever.

Then, in the name of high Heaven, what good does quarantine do?

And what is true of quarantine against measles and scarlet fever is equally true of quarantine against smallpox and whooping cough.

But I am not through with quarantine. It has yet graver fallacies to answer for. It seems to be looked upon as the *sine qua non* in public health circles. When the people get frightened the first thing they think of is quarantine. It makes no difference whether the disease be contagious or not, it must be quarantined. One State Board of Health has even quarantined pellagra, notwithstanding that there is not a shred of evidence that the disease is contagious.

If some check is not applied to this indiscriminate and illogical demand for quarantine, quarantine, regardless of what good it does, the Lord only knows where it will end. In New York a woman is quarantined for some years because she is a typhoid carrier. Doctors Lumsden and Anderson, of the United States Public Health and Marine Hospital Service, in a recent publication[1] estimate that there are 490 such typhoid carriers in the District of Columbia. If this estimate is correct, which it doubtless approximates, there then are some thousands of typhoid carriers in New York going around loose, and one poor Irish cook quarantined. But that isn't all that comes from that great medical center. Dr. Flexner has found that a child suffering from infantile paralysis has in his nose certain secretions that injected into a monkey will produce symptoms of the disease. *Ergo,* the disease must be quarantined, and for six weeks every child with infantile paralysis must be quarantined, in spite of the fact that in a hundred and forty cases studied in Santa Clara Province, Cuba, no two cases occurred in the same family, and in spite of the fact that there no quarantine restrictions were resorted to; and in spite of the fact that it is one of the epidemiological features of the disease that only one case occurs in a family—a characteristic which has been observed by every man that has any first hand information on the subject, and one to which there are few exceptions.

When such examples are set in such centers of learning as in New York, no wonder they are hard to combat in other places. No wonder Shreveport quarantines against Dallas because of a disease, the contagiousness of which is affirmed by the bacteriologist, but whose epidemiological characteristic vehemently denies it! No wonder George Rosset is shuttle-cocked back and forth from Maryland to Pennsylvania, until finally he dies in West Virginia, trying to get to where he can be taken care of, just because he has a disease that, if contagious at all, is so slightly so that the medical world cannot agree upon it.

The great fundamental difficulty lies, it would seem to me, in the fact that bacteriological considerations are allowed to crowd out epidemiological evidence. If the bacteriologist says a disease is contagious, it must be so, epidemiology to the contrary notwithstanding. Witness, infantile paralysis. I would not be understood as decrying bacteriology. No one more appreciates its very great value than I do. The man who created the science of bacteriology was Louis Pasteur, and in that he did more for the world to my mind than any other individual that has ever existed. But what I would raise my voice against is the total disregard of epidemiological evidence in the management of disease.

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[1]Bull. No. 78, Hyg. Lab., U. S. Pub. Health & Mar. Hosp. Serv., Wash., 1911. Report No. 4 on the Origin and Prevalence of Typhoid Fever in the District of Columbia, by L. L. Lumsden and John F. Anderson.

Back now to smallpox. It has been seen that quarantine does no good. When that is manifest, is it not time to abandon it?

Fortunately, we have something else that does do good. We have something that prevents the disease. We have vaccination. But some people object to vaccination. Such will have to take their chances with the disease, just as they have to take their chances with scarlet fever and measles. The two courses are open to them. In measles and scarlet fever there is no choice but to take their chances, and blame their luck if they lose. But in smallpox they have the alternative of vaccination, and then if they lose, blame the choice they made.

But there is a more serious obstacle to getting the public vaccinated than opposition, and that is inertia. Many people would get vaccinated but for the fact that they simply put it off until the disease gets closer, little dreaming that they might themselves be the victims.

I believe wih all my heart and soul that such people should have the protection that an open policy will give them. They should know how close the disease is to them. They should know each day that there are so many cases of smallpox in the city or State. It should be a matter of public record. It should be given out just like yellow fever information was given out during its prevalence. Such a policy would cause temporary disturbance, but it would soon pass away, just as it did with yellow fever. Then those who get the disease would do it with their eyes open. Such a policy would, in my opinion, go further to control the disease than anything else within the range of possibility.

DIDN'T BELIEVE IN VACCINATION

A lady-doctor of the "opposite medical thought," came in the office of the State Board of Health this morning asking for vaccine points, saying that in a neighboring municipality, where she lived and practised, there was smallpox which was being called chickenpox. She was congratulated upon her belief and conviction of the preventive property of vaccination against a loathsome disease. Judge the surprise, when she said, "No, I don't believe in vaccination." "Then why be vaccinated?" was asked. "Oh, smallpox is such a dirty disease." "But yet you don't believe vaccination will prevent taking smallpox?" was again pressed upon her.

That is just it: Prejudice against honest conviction, falsehood against truth, and an unwillingness to acknowledge both, *but*, and here is the farcical side of the incident: She was vaccinated and took some vaccine points with her to vaccinate her family.

MORAL—Why can't people deal honestly with their consciences?

So far as smallpox management is concerned, "unwashed" and "unvaccinated" mean the same thing. Are you one of the "uns?"

SMALLPOX IN THE UNITED STATES

According to the U. S. Marine Hospital Service Reports for 1911, there were in the United States 26,649 cases of smallpox.

Their distribution is interesting.

Florida had 3,155 and Georgia 14!!!

New Mexico didn't report a case. But the States all around New Mexico had it in abundance. Texas, for example had over seven hundred cases, Oklahoma over twelve hundred; Colorado over fourteen hundred; Utah over two thousand.

Do you wonder how this could happen? The answer is dead easy. Smallpox spread pretty well over Georgia, but it was only reported to the Marine Hospital Service from Macon. That is why Georgia appears to have had only fourteen cases. If it had been reported as fully from Georgia as it was from Florida, there would probably have been more cases since they have a larger population.

The truth is that smallpox spread over the entire United States. The number of cases reported is only a small portion of those that actually occurred. In our own State for example, where we have unusual facilities for finding and reporting smallpox, it is believed that not more than half the cases were included in the Marine Hospital Service reports.

Every case that comes to the attention of this State Board of Health during the week is reported to the Marine Hospital Service on the following Monday morning. In this way we got reports of something like 2,600 cases. But at the end of the year, we got reports of about 25 per cent more cases than were received during the year. But even with that, there is reason to believe that we only get altogether about half the cases that actually occur.

Taking it all in all, smallpox has spread more or less evenly, and more or less thickly over the entire Southern and Western United States during the year. The number of cases *reported* in that territory is a better guide to the activity of the health authorities than it is to the actual number of cases existing.

For example, Virginia reported 960 cases; West Virginia none.* It would be interesting to compare the health departments of the two States. For lack of complete information this is impossible, but certain facts can be related that will give an idea. The secretary of the State

*It was learned a few days ago, through a West Virginia druggist, visiting in Florida, who had handled large quantities of vaccine for his State, that smallpox had been generally prevalent in West Virginia during 1911.

Board of Health of North Carolina compiled a list of the States with their public health appropriations, down to $12,500. West Virginia was not included in the list, which indicates that its appropriation is less than that amount, while the appropriation of Virginia is forty thousand dollars. Or to state it another way: in point of appropriation per capita, Virginia is 18th among the States, while West Virginia is lower than 37th.

The five States not reporting any smallpox are: Delaware, Idaho, Nevada, New Mexico and West Virginia. It is an interesting commentary that not one of these States appears in the table compiled by Dr. Rankin, which would indicate that they all have annual appropriations of less than $12,500 each.

Any one with any acquaintance with the epidemiology of smallpox knows that it doesn't go by jumps of that kind without some good and sufficient cause like universal vaccination. And the five States not reporting smallpox have not practiced universal vaccination.

We repeat, the number of cases reported is a better index of the facilities of the health authorities for finding it than of its non-existence.

SUMMARY OF THE SECOND ANNUAL REPORT OF THE ROCKEFELLER SANITARY COMMISSION

The Rockefeller Sanitary Commission has just issued its Second Annual Report. This report shows that in the fight against hookworm disease in nine States for the year 1911 the Commission has expended $148,134.70; that the States themselves have expended $29,938.73; that there have been treated during the year in these nine States 140,398 persons. This means that for every $1.05 expended by the Commission, or for every $1.27 expended by the Commission and the States a human being has been benefited in health and helped to a higher and better scale of living.

But the treating of these 140,398 persons was only an incident in the work; the immediate object for which the money was expended is the education of the people. These State departments of health have enlisted for the war; first effort is being directed toward establishing the work on a permanent basis. The organization in each State is systematically enlisting the physicians in the service so that they may be relied upon to treat all infected persons; these organizations are enlisting the public press and the public schools as permanent educational agencies to teach 20,000,000 of people to see to it that every infected person seeks examination and treatment and ultimately to stamp out the disease by putting a stop to soil pollution.

These organizations have by preliminary survey demonstrated the presence of the infection in 719 of the 884 counties in ten States; have completed the

definite infection survey for 78 counties in nine States, and for this survey have examined microscopically 26,518 rural children from 6 to 18 years of age; have completed the definite sanitary survey in 125 counties, and in this work have inspected 43,448 rural homes.

They have personally visited 5,225 physicians; have delivered 206 lectures to 4,900 physicians; have sent to physicians 64,720 personal and circular letters and 56,180 bulletins. During the year 4,126 physicians have reported treating for hookworm disease 53,167 persons.

These organizations have reached by personal visit 9,450 teachers; by letter, 17,294; by lectures at institutes, 15,448; by bulletins and leaflets, 35,293. They have personally visited 673 newspapers and have given to the press 5,585 letters and 1,813 articles. They have delivered 3,630 public lectures to 452,591 people, and have distributed to the people 913,723 bulletins on sanitation.

In nine States 82 counties have appropriated from county funds for the local expenses of county dispensaries for the free treatment of hookworm disease $10,-699.60, and at these dispensaries 77,236 persons have been treated.

The press and the people are backing the work. Public sentiment is now forming for an efficient county superintendent of health to devote his whole time to the medical examination of rural school children and the conservation of the life and health of the people.

THE LESSON OF ST. LUKE'S

St. Luke's is a general hospital in Jacksonville. During the latter days of January smallpox developed in the hospital among the nurses. Suddenly and without warning five developed the disease within twenty-four hours of one another.

The first thing was utter amazement. Amazement in which every one shared. Then the nurses were properly cared for so as to prevent others getting it, and every one went to asking how it got there.

No one could answer. The fact was it was there. But the how of its introduction was inscrutable mystery.

All eyes turned with suspicion to a certain blacksmith that had been a patient there while suffering from the jimmies. But the physicians did not think he was at fault. And some four or five physicians saw the blacksmith.

At any rate no one suspected the blacksmith having smallpox while he was there—neither physicians nor nurses. And looking back upon it, the most that can be said is that it might have been the blacksmith, or it might not. No one knows. No one will ever know. But this much is certain, whether it was the blacksmith or some one else, it slipped in without arousing suspicion; and slipped out without being detected.

Now, many people want to censure the management of St. Luke's for allowing this to happen. The doctors and nurses are blamed for

allowing a case of smallpox to get in and get out without being detected. To those who haven't been up against the disease it does seem strange that such a thing could occur. But it is not strange at all.

It might happen anywhere, any time, with anybody. It is no reflection upon a doctor that a case of smallpox slips by him undetected. It is altogether likely that there are three men in Florida that have had more experience with smallpox than any other three men on the American continent. All three of these meet with cases of smallpox that they would never suspect but for the presence of the disease in the family. They all meet with cases that they cannot diagnosticate with certainty, and that in spite of all their experience and familiarity with the disease.

Now if, and since that is so, how much more difficult is it for a man who doesn't see in the course of his professional career half a hundred cases? I repeat it is no reflection upon a physician that cases slip through his hands undetected.

Certainly it is no reflection upon the nurse. Most of the nurses have never seen a single case. It is the exception when they do see it. It is no more to be expected of the nurse that she detect an obscure case of smallpox than that the patient should.

But isn't any one to blame? Isn't there anything that can be done to foresee, or forestall accidents of that kind?

Well yes, it can be forestalled. It can easily be prevented. It won't occur at St. Luke's again.

St. Luke's made the same mistake that all unvaccinated people make—the mistake of waiting till it is too late. It is true that there is less reason why they should be vaccinated there than in most places, a department store, for example, for they are less likely to be unwittingly exposed. But, on the other hand, they have better knowledge of smallpox than in a department store, and should accordingly be better prepared against such unforeseen exigencies.

Don't censure St. Luke's. They didn't expect smallpox and accordingly didn't prepare for it. It is not the custom to require nurses in a training school to be vaccinated. In some schools they do it, in others they do not. This is not the first time smallpox has occurred in a hospital. It has occurred in Montreal, and it has occurred in Rochester and other places. Just because Montreal, and Rochester and other places didn't expect it and didn't prepare for it. It has occurred in literary colleges, as well as training schools, and it has occurred in hotels, department stores, tailoring establishments—anywhere that they

don't expect it and don't prepare for it. When it occurs in a family, it is because it has not been expected and not prepared for. Then why should any special censure apply to St. Luke's? Their mistake is of the kind that is oh, so common. It is the kind that every unvaccinated person has made.

It has only been a year and a half ago when the immense Charity Hospital at New Orleans, with its hundreds of patients, was forced to close its doors and sever all communication with the outside world on account of an epidemic of smallpox that developed among the nurses and patients.

In other words they did what the anti-vaccinationists advocate.

But it will not occur again at St. Luke's. Henceforth the policy of the management will be to have all nurses vaccinated. This will cause a protest on the part of some, but the lesson will not be forgotten. St. Luke's will enjoy the same protection that is enjoyed in the U. S. Army and Navy. Nurses will never have cause to complain that they got smallpox there in the performance of their duty any more. Nor will the St. Luke's nurses get smallpox anywhere. They will be safe.

But why couldn't it have been done without this ordeal? Why couldn't the incessant warning of the State Board of Health for years and years and years have been observed without having it so forcibly brought home?

The whole of Jacksonville is St. Luke's on a larger scale. Smallpox is here. It slipped in without being observed. Came as silently as the night comes. The people didn't expect it and were not prepared. The Board of Health had preached vaccination till it became an old thing, something like the same Sunday sermon.

But this will be gone in a few days. Jacksonville will have no more smallpox then in ten years or so. In the meantime the sermon will grow old again. Those who preach vaccination will be regarded as innocent imbeciles, and things will rock along until one day we will wake again, some ten years hence, to go through all this once more. Up and down. Up and down.

But when it comes, the State and city health authorities can in all justice say with Macbeth:

"Shake not thy gory locks at me, thou canst not say I did it."

Let every man follow his own gods. Let those who believe in vaccination as a preventive against smallpox get vaccinated, and those who believe in soap, let them use soap.

A PHYSICIAN'S PLEA FOR A REVOLUTION IN THE AMERICAN SHOE

Hookworm must be fought through a radical modification of the American shoe, insists Dr. W. F. Arnold, a well-known United States Navy surgeon. The machine-made shoes of this country are, he admits, famous alike for their attractive appearance and for their relatively small cost. Nevertheless, all recent studies of the condition of our working-classes agree in putting the cost of shoes as one of the principal items of wage-earners' expenditures for apparel. This is obviously due to their poor wearing qualities, which are ascribable to lightness of construction and to various devices in the manufacture of leather tending to shorten the time of its production. To quote Doctor Arnold, whose paper is in *The Medical Record*:

"In addition to the deficiencies enumerated, there remains another objection, which more nearly concerns my present purpose. It is the fact that it is virtually impossible to make shoes with sewed welts that are water-tight; and it is obvious that hookworm larvae can readily penetrate into any crevice that will admit water; in fact, it is probable that their powers of active movement may enable them to enter into places where slight hydrostatic pressures such as affect shoes and the force of capillarity would not enable water to go. Still another good proof of the ineffectiveness of common shoes may easily be verified by testing their perviousness to sand—as is done daily in most parts of Florida. Not only will the particulate grains of sea-sand be found in abundance inside most shoes, but the much more finely divided, black organic matter that pervades most of the sand in that State after it has weathered for some, will be quite noticeable both upon the stockings and the feet. Furthermore, the question of the perviousness of sewed shoes to water, muck, etc., is virtually granted by most of the persons employed in the tanning and dyeing trades; for they almost always wear, while at work, shoes with wooden bottoms. It is true that these wooden-bottomed shoes have soles that are thicker than could be made expediently of leather, whereby their wearers get the advantage of the additional elevation while at their sloppy work. But the vamps (or 'uppers') of the wooden-shod shoes are tacked into place, and they are thus made water-proof. I assume that leather of ordinary body is larvæ-proof, but it may not be. Obviously, great advantage would be secured by those who are exposed to hookworm infection if they would adopt securer footwear."

Nor must it be supposed that shoes thus reformed would seem unsightly. Their appearance would reveal little trace of their modification.—*Current Literature, May,* 1911.

DISINFECTION

When to Disinfect.—While the patient is sick. *Every day.* Use soap and water. Use it in abundance. Wash and boil the bed linen. Keep it clean. Things that come from the sick bed are all to be regarded as infected till they are disinfected. Boiling water is one of the best disinfectants. Use it freely. Use it often. Things that can't be boiled can be sunned. That is another good disinfectant. Do all this daily and then when the patient gets well the house will be clean.

Then if it will give you a little comfort, or if it will appease the neighbors, or if for any other reason you wish to do it, as a sort of celebration of the termination of the disease, burn a little sulphur or use a little formalin at the same time saying whatever little incantation you like best. *But above all things, don't rely upon the sulphur or incantation, but upon the keeping of things clean.*

What Diseases to Disinfect For.—All patients should be kept clean for cleanliness' sake, but patients with communicable diseases, like smallpox, diphtheria, measles, scarlatina, whooping cough, typhoid fever, and tuberculosis, the above instructions should be very carefully carried out, in the interest of others.

HOG CHOLERA

The State Board of Health has just issued publication 89, Hog Cholera, a pamphlet of twelve pages, by Dr. Charles F. Dawson, veterinarian of the State Board of Health, which consists of a revision of an article on this disease published in THE NOTES September, 1906; and also extracts from Farmers' Bulletin No. 379 of the U. S. Department of Agriculture. This bulletin should be especially interesting to those of our citizens who are hog raisers, and will be instructive to them in handling occurrences of hog cholera. The publication will be sent free of charge, to anyone, upon request.

By their fruits ye shall know—
Which prevents smallpox, soap or vaccination?
Let the "great unvaccinated" answer.

AN OLD SERVANT

He was an old negro, was Abner Jordan. Tall, and lanky, and black. He didn't know much, as the world goes. Perhaps, he never saw an aeroplane, more likely never heard of one. He couldn't read, he couldn't sign his name.

But Abner knew two things, he knew how to stay at his post, and he knew how to obey orders. And these were enough. The days, weeks, years, came and went, but these two things Abner never forgot. During the yellow fever epidemic at Pensacola Abner's baby died. A few tears rolled down his black cheeks. He wiped them on his sleeve. The little one was laid to rest and Abner was again at his post.

Abner was in the employ of the State Board of Health. It was Dr. Anderson who employed him, and to whom he looked for orders, and for pay. It was Dr. Anderson to whom he looked for advice in times of perplexity, and for comfort in time of trouble. It was Dr. Anderson to whom he looked for support when others found fault, and withal for chiding when he mismanaged. It was Dr. Anderson that he loved and obeyed as only an old negro loves and obeys his white master.

When Dr. Anderson was called to his final reward, Abner's heart was heavy. He didn't seem sick, but he was not well. Dr. Pierpont saw him the day before he died, but did not think he was seriously ill. But a merciful Providence allowed him to linger in his grief only ten days when he too was called to follow his master.

A young lady said she had been vaccinated once but that she never would again. She would rather have smallpox. And then when her mother got smallpox, she got vaccinated again twice. Which reminds one of Aesop's fable of

THE FOX AND THE KID.

A kid was perched upon a house when a fox came by. The kid at once began to call the fox names and revile him for being a thief, and asked him if he was not ashamed to be seen in decent company. The fox replied: "Go on with your abuse."

"It is easy to be brave when at a safe distance."

FLORIDA

Health Notes

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Anything you want to know about the public health we will try to tell you.

Any information you want about communicable diseases of domestic animals we will help you to get.

Address communications to Jacksonville, Fla.

The best way to come to truth being to examine things as really they are, and not to conclude they are, as we fancy of ourselves, or have been taught by others to imagine.—Locke.

The Record Co. 47375 St. Augustine, Fla.

FACTS, NOT HEARSAY

It is one of the strange inconsistencies of the human "make up" which induces persons to follow and accept "the talk" of the "say so's," rather than be guided by those whose education and knowledge of conditions and affairs—knowledge begotten by experience—which it would seem reasonable to suppose should impress the average thinker as being better informed on the subject. But it is not so—that is, the latter presumption is not so—for a careful study of human character plainly shows that the disposition of the masses is to accept the opinions of their own kind and class. There are exceptions to this rule, but the exceptions are rare and infrequent when the uneducated are willing to listen, much less to be taught on subjects especially involving their physical well-being, such as health and life. Just why a journeyman mechanic should consider his own opinion or the opinion of his fellow workman of more value and more entitled to acceptance on matters of paving than the professional expert, or why a drayman or hackman should hold to and argue and be thought an authority on plans and specifications drafted by skilled engineers for grading or track laying, or longshoremen and curbstone debaters should be more capable in distinguishing and differentiating communicable diseases than the experienced sanitarian or medical expert is one of the mysteries of mental acrobatism for which the psychologist has never been able as yet to give a rational and satisfactory explanatory answer.

"They say so" is responsible for more heartaches, more disquieting moments, more business upsetting, and more broken friendships than any other three words in the English language is capable of effecting. And when traced and tracked to the source of rumor, the *Ultima Thule*, is *nothing*. It is less trouble for the generality of people to repeat a "hear so" than to try to learn the truth.

The truth perhaps might not fit in to what the news carrier wishes to spread forth. For instance: It was such a tidbit of news for people in neighboring towns to distort the fact of smallpox in Jacksonville. To say that it would be dangerous to visit Jacksonville because of hundreds of cases! For soliciting agents of tourist resorts to board trains just across the Florida line and advise travelers not to stop over in Jacksonville because of a widespread prevalence of smallpox in that city. If such blackmailers could be run down, there is a Florida law which deals with just such aspirants for clad-striped suits in turpentine camps and phosphate mines, but when an effort is made to

catch up with such evil reports, it is generally "They say so" which the investigator falls up against.

There never has been anything like an epidemic of smallpox in Jacksonville this year or for twenty or more years; in fact the writer does not know when, but to prevent such an occurrence the city authorities, especially the health department, thought that it was their duty to tell the people in plain truth that vaccination was the only sure means of preventing smallpox and the time had arrived when the people of Jacksonville should awake from their lethargy in this particular and be vaccinated and thus prevent a general prevalence or epidemic. Now that was all there was to it. The people responded to the warning, were rapidly vaccinated and thus protected, and from a daily report of 10-12 cases early in February, at the middle of March there were only 2-3 cases daily, and a calamity to the city had been averted. There has never been a day in this year or in last year when a properly vaccinated person was in the slightest bit of danger from smallpox in Jacksonville or for the matter of that, anywhere else in these United States or the whole world. Therefore, the charge that publicity in regard to smallpox in Jacksonville and the general advice for vaccination given by the city health authorities and concurred in by the State Board of Health, has injured the city in a financial way is an unwise and not proven assertion. The truth never injures. It may sometimes cause smarting but only of a transitory nature and the reaction to sense is always healthy and normal. It was a very simple matter to find out from the Jacksonville authorities just what was the status of smallpox in Jacksonville. To any one asking, the truth would have been told in plain and unvarnished words. The city health officer would then and will now tell the truth about the health conditions of Jacksonville at all times, never mind whose monetary sensibilities may be touched or invaded. He feels that his duty is to the lives of the people and not to their pocketbooks, but he is at the same time conservative in every movement and action, and is not inclined to be radical in his management, ever trying to harmonize the health interests of the city with the commercial progress and prosperity of the municipality. It is a pleasure for the NOTES to make this public statement. It must be conceded, however, that keeping back the truth, and pursuing a policy of "quiet" would never have gotten the results—the gratifying sequences which followed a course of publicity in the smallpox situation, which at one time threatened to be serious. Now why people should have exaggerated conditions and falsified the existing

facts, and why they should not have made inquiry and learned the truth instead of repeating hearsays, is, as was said at the commencement of this article, one of the mysteries and inconsistencies of the human character. When communities and municipalities cease to be envious of one another to the extent of circulating malicious untruths, either about the commercial credit, or the health situation of their neighbors then will the State prosper in every direction. When calamities unfortunately come to any part of the State—sickness, floods or cyclone—let the truth be told—keeping nothing hidden, but for the sake of honesty and truthful dealing with every section, ascertain the facts, and above everything else do not exaggerate conditions. Tell the truth but do not deal in slander.

SANITARY REFORMS IN JACKSONVILLE

A single open closet in a community may become a nuisance on account of its smell. Two open closets, or three, or twenty, or a hundred may become almost intolerable nuisances, on account of the smell, and will do so if not kept scrupulously clean. But smells do not make people sick.

An open closet in the community becomes a real danger when *used by some one suffering from one of the sewage borne diseases.* Typhoid fever, and amoebic dysentery, for example. A closet is innocent of danger, until used by some one who has intestinal parasites.

Here and there are people who have intestinal parasites that are dangerous. For example, a person suffering from typhoid fever, or amoebic dysentery. If such a person should use an open closet, then that closet becomes a danger to the community.

Sometimes after a person gets well of typhoid fever he continues to give off typhoid germs for weeks or months. Such a person is called a typhoid carrier and it is considered dangerous for him to use an open closet—dangerous to the community.

It has been estimated that three out of every hundred persons that have typhoid fever afterwards become typhoid carriers.

It has been estimated that five out of every thousand people that you meet are typhoid carriers.

If that is true, a village of a thousand persons would have five typhoid carriers. Now if all the people in that village used open closets, there would be much more danger from typhoid fever than from a village of half that number. The larger the community becomes the greater the number of typhoid fever cases, and the greater the number

of carriers—the greater the danger from typhoid fever or other intestinal diseases.

The larger the municipality the more scrupulous care the closets must have to keep them from smelling to high heaven, and the greater danger they become to the public health. Eventually they have to be displaced and other methods of sewage disposal adopted.

Usually the closets are not displaced as long as it can be helped. Either the smell or the sickness has to become pronounced before action is taken. Even then palliative measures are sometimes adopted, and action still deferred as long as the smell can be disguised. But finally as the village grows into a town and then into a city, a time comes when palliative measures will no longer serve. The smell may be covered, but not the death rate. "Murder will out."

But even after a city puts in a modern sewerage system, its troubles are not all ended. The city has to grow ahead of the sewer. There will always be a rim around the city where the sewers do not extend. There the open closet problem stares the people in the face.

This was the condition that stared Jacksonville in the face for several years. It was a condition of this kind that gave Jacksonville a typhoid rate that made her very uncomfortable. Two years ago Jacksonville was, to all intents and purposes, a sewered city of 25,000 people, surrounded by an unsewered city of 30,000 people. It was the unsewered city that gave the trouble.

That has been remedied now. The story of its remedy reads like a romance to any one interested in the public health. The story was told by Dr. Chas. E. Terry, city health officer of Jacksonville, and can be had by applying to him:

TYPHOID FEVER.*

The number of deaths from this disease were less in 1911 than for any similar period for the past four years. Prior to 1907 our records are not available. During 1911 there were 40 deaths from typhoid against 62 in 1910, a reduction of 22 or 35 per cent. This gives us a typhoid death rate of 62.85 for 1911 against 106.3 for 1910. I realize that this is not low but in view of the high typhoid death rate of 1910 and previous years our methods of sewage disposal and certain other insanitary conditions which exist in this city, I feel that the department may be justly gratified with the reduction.

There were reported during 1911, 158 cases of typhoid against 329 in 1910. Of these 158, 70 originated in the city and 88 were imported. In determining this point, only those which developed active symptoms within one week after coming to the city were classed as imported. The number of cases contracting the disease here would, in all probability, be smaller were the actual facts known.

*From Annual Report of the Board of Health, City of Jacksonville, Fla., for 1911.

Of the 40 deaths that have occurred from this disease 25 were cases that had acquired the disease elsewhere, only 15 of the decedents acquiring it in Jacksonville.

Of all deaths 27 were white and 13 colored. The case fatality among the whites was 18 per cent and among the colored 81.2, only 16 colored cases being reported. This colored case fatality is manifestly absurd, but is easily explained. The disease has been of a mild type for the most part and a large proportion of the colored cases have gone through the entire course without any medical attention or possibly but one or two visits from a physician. In these cases no diagnosis was ever made. There is also, undoubtedly, a considerable percentage of cases which were treated by the more ignorant class of colored physicians and which also passed unrecognized, labeled instead "malaria" or "continued fever." It is entirely impossible to obtain a full or correct report from the colored cases in this, as in other diseases, and, where practically one-half of the population is composed of negroes, the task of a health department is rendered as difficult in the keeping of accurate records as in the actual work of health protection.

I have already touched upon this matter several times in this report, but, in the consideration, especially, of preventable disease, do the difficulties of dealing with this portion of our population appear most discouraging, for, to the usual obstacles encountered in all public health work, are added the ignorance, indifference and willful opposition of this colored half of our citizens.

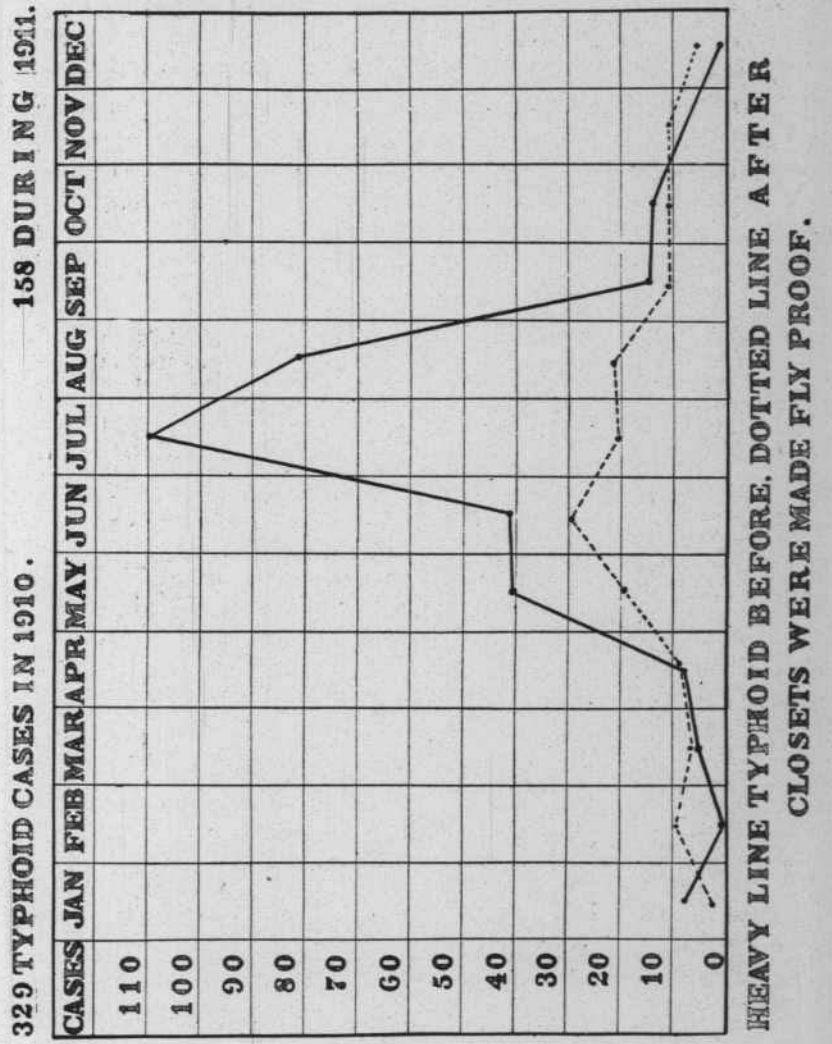
Notwithstanding the incompleteness of our case reports, we may, for purposes of comparison, quite safely use them as they are more complete than those of 1910. This reduction of 171 cases and 22 deaths in typhoid I attribute in very large measure to the passage and enforcement of Ordinance K-54, regulating the construction and maintenance of dry closets.

This ordinance required the rendering fly proof of all dry closets within the city. It was passed by the city council on August 2, 1910, upon the earnest solicitation of this department. A careful study of the 329 cases of typhoid reported during 1910, with reference to possible sources of infection, convinced us that the large majority of cases were due to the combination of wide open privies and fly carriage. I will not review all the steps of this work as they are contained in the report of this department for that year. It is sufficient to say that there were, approximately, 25,000 people using open privies and that these privies were distributed in every section of the city so that, even those having sewer connection themselves, were not immune to fly infection from nearby privies.

The typhoid curve that year followed so closely the fly curve, that, in connection with the facts already given, our conclusions seemed the only reasonable means of accounting for the prevalence of the disease. On page 10 of the annual report for 1910, in connection with the work of reconstruction of privies already well started, occurs this sentence: "It is hoped that by the first of March the work will be practically completed and with its completion we expect to see a decrease in the prevalence of typhoid during the coming summer."

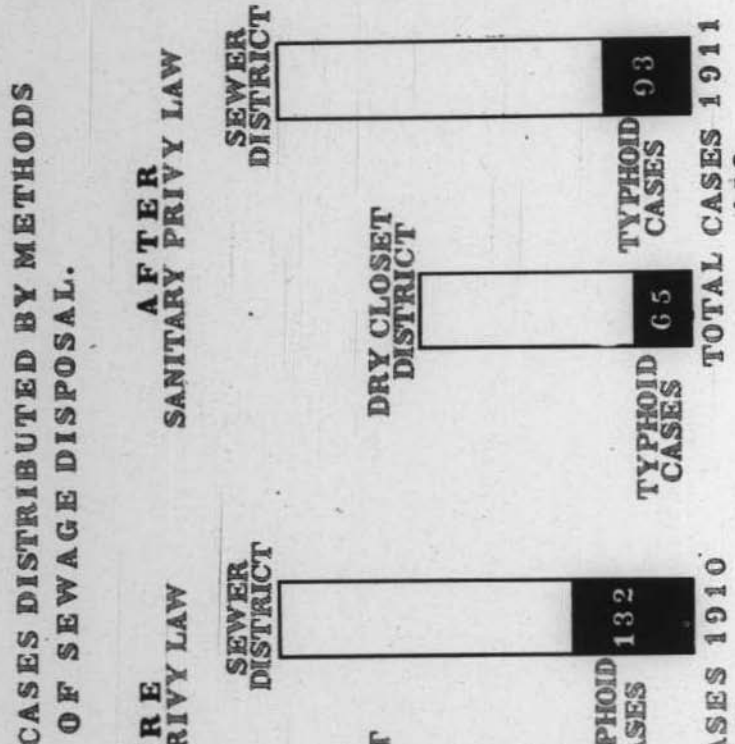
By the beginning of the fly season of this year (the first of March), 80 to 85 per cent of these privies had been rendered fly proof. The ordinance was enforced as rapidly as possible, no effort being spared to render its operation general, and by July or August comparatively few insanitary privies remained. The accompanying chart shows graphically the results. The heavy line indicates the

typhoid cases, by months, as reported to this department during 1910, the dotted line the cases reported in 1911.



Together with the rendering fly-proof of the privies, each case, as reported, has been visited by an inspector and careful directions given as to the disposition of discharges, disinfection of linen and utensils and the dangers of carrier cases. This has been supplemented by printed instructions left with each case. In addition we have required the sick room, in every case of typhoid, to be screened and the flies found in it destroyed. Where poverty made this a hardship, this department has furnished mosquito netting, disinfectants, fly paper, etc. These cases are visited every other day until convalescence, to make sure our orders are carried out.

A comparison of the distribution of the cases originating in this city during 1910 and 1911 is interesting. During 1910, 60 per cent of all the cases of typhoid were distributed in the dry closet district, forty per cent in the sewer district, in spite of the fact, that the sewer district comprises considerably over one-half of our population. During 1911 this distribution has almost been reversed, 41 per cent of the cases occurring in the dry closet district against 59 per cent in the sewer district. This latter distribution places the typhoid cases very nearly according to the population as a whole, regardless of methods of sewage disposal. On the following page this is shown diagrammatically. The only change in sanitary provisions which has occurred, in the city as a whole, since the bulk of the cases of 1910, is the rendering fly-proof of the dry closets.



A further study of the cases of 1911 show that of the 70 originating in Jacksonville 63 used city water, 7 pump water. Reference to the report of the bacteriologist will show that the water supply has, at no time, given evidence of sewage contamination. The milk supply likewise seems to bear no relation to any of the cases in Jacksonville. Only 9 per cent of these cases used any cow's milk before their illness and no dairy has been under suspicion. Of the 88 imported cases 30 were brought in from the immediate vicinity of Jacksonville, from small settlements a short distance beyond the city limits. In all of these settlements open privies are used and in each of them typhoid has been continuously epidemic. Thirty-eight cases were brought in from distant points in the State and 20 from other States. The State as a whole had its annual share of typhoid. In review, it will be seen that practically all of the preventive work done by this department against typhoid fever has been directed against the fly and it would appear, in spite of the lack of strictly scientific proof, that it has had a very direct bearing upon the reduction of morbidity and mortality from this disease.

In spite of the fact that such gratifying results have been obtained, by the rendering fly-proof of these privies, the fact must not be lost sight of that it is but a temporary expedient and will give but temporary relief. It is impossible to keep these places constantly in repair. They are used, for the most part, by a class of people who look with ridicule upon the necessity of care in the disposition of human excrement, or those too indifferent to matters of public import to observe more than the naked letter of the law.

Until this city is completely sewered, we may look for an undue prevalence of typhoid fever and other intestinal diseases. Our most crying need is a rapid extension of our sewerage system. A privy is an abomination in a modern city and its accompaniment of intestinal diseases a grave reflection on the sanitation of any community.

While, as will be seen in the report of the plumbing inspector, 539 privies have been replaced by water closets, yet 616 new buildings have been erected during 1911 that could not be connected with sewers. The sewerage extension work is not keeping pace with the rapid growth of the city.

Of the recent issue of $250,000.00 worth of bonds, one-half of that provided for by the last State legislature, $195,000.00 have been apportioned for sewers and drains. This amount, will, if expended where most needed, replace a great many privies with sewer connections, but it is hoped that of the balance of $250,000.00 soon to be available by bond issue, an even greater proportion will be devoted to sewerage extension. Well paved streets serve an admirable purpose and parks and similar public improvements have their place in every municipality, but the system of sewage disposal of a community means life or death to its citizens and good or ill repute abroad.

SOME FLY INVESTIGATIONS.

Inasmuch as scientific research is bringing forth, each year, additional evidence of the dangers of the house fly to the public health; and, especially, in view of the role we feel the fly has been shown to have played in the dissemination of typhoid fever in Jacksonville in past years, we have made some investigations of the various fly-breeding places in the city, with a view, if possible, of suggesting some means of limiting the prevalence of this insect. We have endeavored, as far as

possible, to cover all the major fly-breeding places. The inspection has been productive of information we had not anticipated, and while I have hesitated to incorporate it in full in this report, on account of its length, yet I feel that it is a matter that bears a close relation to the public health and therefore should be given in detail.

The objects of the inspection were:

1. To discover what conditions appear to be responsible for the breeding of flies in the city.
2. To ascertain the actual number of stables in the city harboring one or more horses or mules.
3. To determine what part, if any, is played by these stables as fly-breeding places.
4. To discover in what measure the construction and maintenance of stables affects their fly-breeding possibilities.
5. With a view, if it be deemed advisable, to the framing and passage of a new ordinance, intended to eliminate as far as possible the fly-breeding and other insanitary features of horse stables.
6. To discover what relation places such as privies, garbage dumps, etc., bear to fly-breeding.

The information sought in the preliminary general inspection was the location of all horse stables and the material composing their floors. This inspection was carried on simultaneously by the patrolmen on all the districts of the city. The results were:

Stables having dirt floors	944
Stables having wood floors	136
Stables having cement or brick floors	16
Total stables reported	1,096

This general inspection was followed by another made by one man of a certain number of stables in every section of the city. In this inspection, the information sought in each case was intended to show what proportion of stables were breeding flies and what features in their construction and maintenance seemed most favorable or unfavorable to this condition, *i. e.* fly breeding.

DETAILS OF INSPECTION OF DIRT FLOOR STABLES.

In 113 dirt floor stables the information gathered by this inspector related to the degree of prevalence of flies; the presence or absence of larvæ or pupæ in the floors; the condition of the ground in the stalls, hard, soft, wet or dry; whether manure was in a loose pile or in a container covered or uncovered; the presence or absence of flies in the manure or in the ground under the pile or container; whether or not there was any other fly breeding place on the premises in question and general cleanliness of stables.

The following facts were elicited:

Larvæ or pupæ were found *in* the floors in	79
Floors free from larvæ or pupæ	34

In those floors free from larvæ there were chickens scratching in 15.

In the remainder free from larvæ, 19, the stables had just been cleaned and the top soil replaced by dry sand.

All the dirt floor stables where chickens were not present, and which had not been thoroughly cleaned just prior to the inspection showed the presence of larvæ or pupæ.

In many instances where larvæ or pupæ were found, the stalls appeared to be clean, that is there was no evidence of manure or bedding, the latter having been swept up, but the larvæ were found at a depth of from one to three inches. In all cases, and in every case the ground was searched to a depth of six inches.

The character of the ground which seemed from this inspection to especially favor the development of larvæ was soft, wet ground. They were in no instance found in dry, hard ground, whereas pupæ abounded in the dry portions of those stalls which contained larvæ where the ground was soft and moist from the admixture of urine.

In the 19 stables where no larvæ were found on the first inspection and where chickens were absent, a second inspection was made ten days later. This subsequent inspection showed larvæ present in 13 stables and absent in 6 which had again been thoroughly cleaned just prior to the inspection.

As already stated, these 113 stables with dirt floors were a fair average of such stables well distributed throughout the city and the findings may safely be taken as indicative of conditions existing in *all* stables in Jacksonville.

CONCLUSIONS--DIRT FLOOR STABLES.

1. Ninety-four per cent of dirt floor stables where chickens were absent showed the presence of larvæ or pupæ.
2. Between seven and eight per cent of the stables inspected contained no larvæ owing to the presence of chickens.
3. There are in the city 817 dirt floor stables breeding flies throughout the season, except for an occasional period of a few days when the top soil of the stalls is removed to a depth of three to four inches and replaced by clean sand. In the large majority of cases this is *never* done.
4. Simple removal of the manure and litter from the surface of a dirt floor stall in nowise affects its fly-breeding activities.
5. Chickens, when present in sufficient numbers and allowed the run of the stables, seem to pretty effectually prevent fly breeding in the dirt floor stalls, by feeding on the larvæ and pupæ.
6. The moisture and decomposing animal and vegetable matter found in dirt floor stables are entirely suited to the breeding of flies and are unavoidable in a floor of this construction where drainage of liquid wastes is made impossible by the absorbent nature of the floor.
7. The infrequency of manure piles where the stables have dirt floors, as compared with premises maintaining wood floor stables, seems to be due to the fact that all the filth is left in the stalls until its accumulation is such as to warrant the hiring of a wagon to haul it off. The appearance of many of these places corroborates this assumption.

DETAILS OF INSPECTION OF WOOD AND CEMENT FLOOR STABLES.

Fifty-two (52) or one-third of all the wood and cement floor stables reported were inspected in detail with the view of determining:

The soundness of the floors; whether or not they were well drained; if the drains connected with the sewer or emptied on the ground; whether or not the foundation of the stable was so constructed as to allow the ingress and egress of flies under the floor; the presence of larvæ or pupæ on the floor or in the manure pile or container.

The following information was obtained:

Floors tight and sound	36	70%
Floors not tight and sound	16	30%
Floors well drained	3	5%
Floors not well drained	49	95%
Foundations *without* openings below floor level	22	43%
Foundations *with* openings below floor level	30	57%
Larvæ or pupæ discovered *on* and *in* the floor	36	70%
Larvæ or pupæ *not* found *on* or *in* the floor	16	30%
Larvæ or pupæ discovered *under* the floor	12	23%
Larvæ or pupæ *not* found under the floor	11	21%
Unable by reason of construction to inspect under the floor	29	56%
Stables found clean at time of inspection	19	36%
Stables found in bad condition at time of inspection	33	64%
Larvæ or pupæ found in manure whether in loose pile or in container	20	38%
Larvæ or pupæ *not* found in manure pile or container	4	7%
No manure on premises	28	55%
Manure in suitable receptacle and covered	3	5%
No covered receptacle provided for manure	49	95%
Stables with drains connected with sewer	3	5%

It so happened that there were no chickens present in any of the fifty-two wood or cement floor stables inspected, hence the results are indicative of actual conditions regardless of the activities of these fortuitous scavengers. The reason for this seems to be that the wood and cement floor stables are located, for the most part, in the business and better residential districts where chickens are not kept at all or are confined in pens.

CONCLUSIONS—WOOD AND CEMENT FLOOR STABLES.

From the foregoing summary we may safely claim that:

1. Flies are breeding on or in 70 per cent of the wood or cement floors as against 94 per cent of the dirt floor stables. In nearly one-half of these cases the presence of larvæ was due to the fact that the floors were not tight and sound, *i. e.* contained cracks, broken boards, depressions, etc., which escaped the broom or shovel. In the remainder it was due to carelessness on the part of the householder.

2. Flies were breeding under the floors of 23 per cent of the wood floor stables. This percentage should probably be much larger as in over one-half of the stables inspected the construction of the building prevented the determination of this point without precluding its possibility.

3. Two factors appear to lead to the breeding of flies *under* wood floor stables. If the floor be not tight and sound it permits particles of fly-blown manure, as well as urine, to fall upon the ground beneath the stall and we have

here all the conditions most favorable to the development of the larvæ food, warmth and moisture. Again if the foundations of such stables be not tight, below the level of the floors, flies will enter this space and oviposit in the material they find awaiting them.

4. Flies were breeding in the manure pile in 38 per cent of all the stables inspected. Of the fifty-two wood floor stables inspected, however, there was no manure pile in 28 or 55 per cent, it having been hauled away just prior to the inspection. No suitable receptacle was provided for the manure in 95 per cent of the stables inspected, from which fact we may assume that at one time or another 95 per cent of the manure piles are breeding flies.

5. It further appears that 95 per cent of these wood floor stables are not well drained in spite of the fact that the material of their construction would easily permit of such drainage with but little additional expense. Only three or five per cent of the fifty-two inspected were connected with the city sewer. In spite of the fact that a large number of stables, in fact nearly all of the public and semi-public ones, lie in the heart of the business district and in the best residential neighborhoods, their sanitary provisions are so elementary as to be barbarous. In the matter of general cleanliness the public stables far outrank the private ones.

GENERAL CONCLUSIONS, STABLES.

1. There are in the city nearly 1,000 dirt, wood and cement floor stables where, during the season, flies are breeding in immense numbers.

2. The reasons for this condition of affairs lie, first in the faulty construction of the stables in question, secondly in defective rules of maintenance and lack of observance of those already in force.

3. A new ordinance dealing especially with the material used for flooring; proper drainage, with sewer connection where possible; covered receptacles for manures, etc., is needed to control the fly-breeding nuisance occasioned by the present conditions of the horse stables of this city.

DRY CLOSETS.

These places are, in many localities, prolific fly-breeders, all the conditions of food and moisture being present. Flies bred in such places are a menace to the health of the public, owing to the infectious material they carry. It was with a two-fold purpose that Ordinance K-54 was passed, to eliminate them as breeding places as well as foci of infection where flies bred elsewhere could obtain a dangerous burden to disseminate in neighboring kitchens and dining rooms. This department feels that the ordinance above referred to, requiring, as it does, the screening of these places, has had a direct bearing upon the reduction in the typhoid fever reported this summer.

Little, if any, more can be done to prevent flies from breeding in these closets than has already been accomplished by this ordinance. It is at best but a substitute for a complete sewerage system.

GARBAGE DUMPS.

Excluding privies, the city dump comes next in importance as a fly breeding place in Jacksonville. There are eight or ten of these dumps distributed about the city. Here again the backwardness of the Southern cities in the disposition of various waste materials must be taken into consideration. The waste of Jack-

sonville far exceeds the capacity of the crematory. There are besides, numerous low, marshy places, a number of them owned by the city, which it is desirable to reclaim for parks and other public purposes. To such localities is hauled the garbage which the crematory is unable to dispose of. In spite of an ordinance prohibiting the placing of kitchen refuse in the trash barrel, every load brings its proportion of decomposing animal and vegetable matter—from dead dogs and cats to a miscellaneous assortment of fruit rinds, feathers and fish heads. Fermentation takes place quickly and in every section of these dumps are found the larvæ of the house fly during the warmer months.

The department in charge of garbage collection has tried, upon the solicitation of the health department to minimize the nuisance as far as possible by covering this evil smelling mass with clean sand. In order to determine what depth of sand would be required to prevent the maturing of these larvæ we have conducted some experiments along the line of those recently carried on by Doctors Stiles and Miller, reported in the Public Health Report of August 25, 1911.

These experiments have consisted, briefly, in burying fermenting matter containing fly larvæ or eggs at various depths in ordinary soil. For this purpose tubes of four-inch galvanized rain spouting were used, with eighteen-mesh copper wire cloth fastened over the lower end. The material containing the larvæ was introduced on top of this and the tube filled with sand and buried in the ground. Two inches of the upper end remained exposed and the top was covered with copper wire cloth, leaving a chamber in which any flies which might hatch would be confined. Tubes in lengths varying from six to forty-eight inches were used. The larvæ or eggs, were placed in stale bread previously sterilized and saturated with pure bouillon culture of *B. prodigiosus*, upon which presumably the larvæ would feed before starting on their journey upward. The sand covering the larvæ was sterilized.

From all of these tubes, adult flies were recovered in periods varying from five to sixteen days, the average for six different tubes being seven days. One tube prepared as described and kept in the laboratory, instead of being buried, in the present month (November) took sixteen days to hatch its first crop of flies, owing presumably to the cold weather, the room being without heat at night and the temperature much lower than the outside temperature during August when the bulk of these tests were made.

The flies, when hatched, were treated in two different ways: some were introduced alive into flasks containing sterile bouillon and allowed for an hour or two to deposit their excrement upon the sides of the flask, they were then agitated and the bouillon incubated, others were mascerated before being introduced in the flask in order to thoroughly expose the contents of the alimentary canal.

From flies hatched from 14, 26, 36, 41 and 48 inch tubes *B. prodigiosus* was recovered. It will be noted from the average of seven days that the depth at which the larvæ were buried apparently played little part in the length of their development into adult flies, although the shorter tubes hatched a larger number of flies than did the longer ones. How long these flies would continue to distribute in their specks *B. prodigiosus*, I do not know. Faichnie in 1909 recovered *B. typhosus* from flies for several days after the latter had emerged from larvæ fed on feces containing these organisms. Ficker in 1903 recovered from flies *B. typhosus* twenty-three days after their infection. In our experiments, sixteen

days is the longest time that *B. prodigiosus* appears to have remained in the intestinal tract of the larvæ and pupæ of the fly from which we subsequently recovered it.

As already stated, 48 inches is the greatest depth from which we recovered flies buried as eggs or larvæ. The onset of cool weather has left the work incomplete in many particulars. Dr. Styles succeeded in recovering them through 72 inches of sterile sand.

In view of these facts, it would appear that the six or eight inches of sand customarily used in Jacksonville to cover the garbage dumps would in nowise interfere with the hatching of flies from the decomposing material beneath. In the inspection made of these dumps larvæ were found at a depth of eighteen to twenty inches. Presumably they all hatched.

In an active campaign against the house fly in municipalities such immense breeding places as these garbage dumps should, most undoubtedly, be discontinued. The possibility of distribution, by adult flies, of micro-organisms ingested during their larval stage causes the dump to assume a still more serious aspect from the point of public health when the contents of the average trash barrel are considered. Should not also the trenching of night soil as practiced by no small number of communities be discontinued in view of this faculty of the insect?

It is my belief that a construction and maintenance of horse stables along the lines indicated, the screening or, better still, the abolition of privies and discontinuance of garbage dumps will so far control the fly pest as to almost entirely overcome the dangers of disease dissemination by this insect.

There is another class of breeding places which will continue to furnish a certain number of flies—those occasioned by the chance scattering of decomposing animal and vegetable matter about yards and alleys and by the not infrequent custom, in the best sewered communities, of a certain class of individuals, mostly ill-cared for children, of depositing their excrement in any locality which affords a convenient concealment at the time the desire for relief comes upon them. Where a large proportion of the population is composed of negroes, as lacking in nicety of habits as in responsibility, this incubation of the house fly will never be eliminated, and in connection with the abolition of the major breeding places, if we are to attain the full reward of our endeavors, we must, I believe, adopt the suggestion of Prof. Hodge that of trapping the adult fly during the time elapsing between its issuance from the puparium and the establishment of sexual maturity. According to Hewitt and Griffith, the female oviposits from ten to fourteen days after emerging from the puparium. This period is most favorable for her capture. The enormous number of progeny of a single female fly during a breeding season, as estimated by Dr. Howard, seems a strong argument for her destruction early in the year.

We have done some outside trapping in Jacksonville on a small scale with most gratifying results, the type of traps used being those made of wire cloth in the shape of a cylinder upon a metal frame with a cone inside arising from the bottom. They may be obtained from several different manufacturers at a small figure and when baited with syrup or other suitable material perform most excellent execution. In three days at a back door of a down town restaurant, we captured 9,000 flies while inside a fish market in a similar period, we captured

over 10,000. A second exposure of the trap behind the same restaurant resulted in the capture of comparatively few, presumably owing to the local nature of the pest.

I believe, in any community where the habits and dangers of this insect have begun to be appreciated by the laity (through the efforts of civic associations and other organizations interested in the public good) fish and meat markets, restaurants, public stables and such other places as afford especial attraction to the fly, may be induced to install such traps with little persuasion.

GENERAL CONCLUSIONS.

First: where infectious material, as in open privies, exists in a community with exposed food supplies together with an abundance of flies, active measures against this insect are a public health necessity.

Second: the house fly may be practically eliminated from municipalities by the proper construction of horse stables with especial reference to water tight, well drained floors and the prompt removal of manure; the rendering fly-proof of surface privies and the abolition of garbage dumps.

Third: the burying of infectious material if fly-blown at any practical depth will not prevent either the maturing of the contained larvæ or the dissemination of infection by the flies hatching therefrom.

Fourth: trapping, especially early in each fly season is a practical auxiliary measure.

FLORIDA

Health Notes

IN GOD WE TRUST

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This is the way that physicians mend or end us,
Secundum artem; but although we sneer
In health—when ill, we call them to attend us,
Without the least propensity to jeer. —Byron.

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THE PASSING OF THE WORD "QUARANTINE"

Whether in affairs of government or in business, a certain well-defined method for conducting the same must be adopted, else confusion follows and monetary and commercial loss results. To transact business in a haphazard manner is only to invite disaster and after a while a tangle that it is impossible to untwist. Therefore, to be successful in commercial life or in national matters a policy must be formed and strictly observed, lest the people to be governed or the business to be conducted shall drift into hopeless embarrassment.

This remark leads up to the subject in mind, which was touched upon in the March issue of the NOTES: Policies of the State Board of Health. The executive office of the Board entertains certain pronounced views on public health management which it may not be amiss to talk about and inform the public upon, and which were discussed in the 1911 report of the State Health Officer at the last annual meeting of the Board. As it will be some little time yet before the report comes from the printer to be distributed, it may interest the readers of the NOTES to know what these views are in regard to a management which has been successfuly tried out.

Speaking of the management of the communicable diseases, especially smallpox, the State Health Officer remarks:

Letters upon letters come to the State Health Officer asking "for protection against smallpox," as if he possessed some mysterious wand with which he could, by its wave, drive away the malady. Communities want to quarantine, and individuals wish to drive out the unfortunates and, it must be admitted, the ignorantly obstinate—for if not obstinate they would be vaccinated and thus protected—who have contracted this loathsome disorder. The thought uppermost in the minds of most of these correspondents is *quarantine*, as if quarantine of smallpox ever did any good or could be made effective against the hundreds of cases which are so mild in character as to be unrecognizable except by the most expert authority, and oftentimes so mild and trivial then that even one well versed in the detection of cases feels himself incompetent to make a decision.

It seems to be entirely forgotten—if the thought or consideration of the subject is ever seriously dwelt upon—that the communicable diseases vary in their severity according to latitude, and that such diseases have a far different potential significance in the northern portions of the United States than the same diseases in the Southern States, and yet it is proposed that there shall be but one system and one plan carried out to control. Certain of the communicable diseases, such as scarlet fever, measles and smallpox, seem to be more clearly accentuated, if such a term can be used, in the colder portions of the country than in the warmer latitudes. The facies of these particular diseases is recognized and detection is almost sure and easy. They are text-book cases. But it is entirely different with these diseases when happening in warm latitudes and countries. Here the symptoms are slight, occasioning but little discomfort and rarely confinement to bed, and it is not plain to see in these mild cases where and

when no physician is called in—for a physician's call means money going out—and without information to the health authorities, how such cases can be quarantined when even the parents or individuals themselves are ignorant of the nature of the sickness from which they are but slightly indisposed. How then would a quarantine of one such case be any protection to a community when many others unrecognized are running at large?

This pertinent fact applies with greater force to smallpox than to the other communicable diseases, because against smallpox a protection has been discovered, and when accepted is as sure in its sheltering care as is an asbestoes house against the destructive force of fire.

The State Statutes directing the reporting of cases of smallpox, to which reference has already been made, also prescribes what disposition shall be made of them, and gives discretionary authority to the State Health Officer in the management; therefore, having tried quarantining smallpox and having found that such a method did not tend to abate the spread of the disease nor to lessen the number of cases, this system of management has been abandoned, and is now replaced by caring for the indigent and by allowing a per diem for maintenance and such medical attention or nursing as the severe cases call for. Imperative instructions are given the sick to keep off the public highways and out of public places under penalty of arrest after recovery for violating the mandates of the State Health Officer approved by the State Board of Health. Guards for smallpox patients are not permitted nor is such a course of management sanctioned by municipal authorities, even if the municipality is willing to defray the expense, because as already stated, all cases are not reported, neither recognized, and it is the unrecognized cases which keep the flame of contagion spreading.

The use of the word "quarantine" as indicating a means of control of the communicable diseases is disapproved of by the State Health Officer, who concludes his remarks to the Board on this subject in the following significant language:

It may as well be understood first and last that he is unalterably opposed to the use of the word *quarantine* in the management of any of the communicable diseases, *but* that he will enforce segregation and isolation wherever and whenever cases of communicable diseases designated by the Statutes, are brought to his attention or knowledge.

And he clinches his argument in the first of his recommendations to the State Board of Health for the improvement of the service, by saying:

It is recommended, first, that the Board set its seal of disapproval on the further use of the word *quarantine* as applied to the spread or suppression of communicable diseases. In this enlightened age quarantine means absolutely nothing in the manner or way of management of disease. In the dim and misty past, the sixteenth and seventeenth centuries, it was the custom to hold vessels—and the word was then used principally in connection with maritime supervision and detention of shipping supposedly infected with contagious disease—for forty days, because it was held in those days that the contagion of disease would not live longer than that period. Nothing was then done except to hold the vessel and passengers for that length of time, at the expiration of which both the vessel and passengers were set free. In the light of recent scientific investigation we know

that detention plays but a minor part in the suppression of disease or the prevention of its spread. Take yellow fever for instance—a disease nearly extinct on the Western Hemisphere—the precautions against spread and transmission are directed not so much against the sick individual as to a destruction of the transmitter of the infection, and to prevent the sick individual, by proper and effectual screening during the first three days of illness furnishing the poison to the mosquito to be in turn metamorphosed into a something which we only know as a filterable virus and when subsequently injected into a non-immune person will produce an attack of yellow fever.

Under a mosquito net and in a mosquito-proof screened room a yellow fever patient need not be held for forty days—quarantined; in fact, need not be withheld from the public after the first five days of illness.

Has holding smallpox patients for forty days ever controlled or prevented smallpox from spreading? Quarantining, so-called, means placing of guards to inhibit patients from leaving homes and houses. The experience of the executive office has been that guards have been in the past generally incompetent, and in several instances in the early days of the Board's management of smallpox, where this practice was resorted to, additional guards had to be employed to watch the initial guard placed over the smallpox patient. The practice is costly and avails nothing in the way of protection to the public, because a smallpox patient, if, only slightly ill, wishes to leave the house, he can do so at pleasure, for the guard would have no authority to shoot and thus commit murder, and every one knows no attempt to restrain by physical force would be exercised, for a guard will not grasp or hold a person covered with the sores and scabs of smallpox. What folly, what nonsense, to rely upon such broken reeds for protection!

What has been said about the employment of so-called quarantine in smallpox and yellow fever can be applied to the management of the other communicable disorders with equal significance and verity. Therefore, let the guard be excluded from the vocabulary of preventive measures which the State Board of Health of Florida adopts to prevent and control the spread of dangerous diseases communicable through a special germ or parasite.

Thereupon, the Board, while in annual session, by motion, properly seconded and adopted, approved the abandonment of the use of the word "quarantine" in the management of communicable diseases.

PROCEEDINGS OF THE 1912 ANNUAL MEETING OF THE STATE BOARD OF HEALTH

The State Board of Health of Florida met in annual session at its executive offices on Monday, February 27, 1912.

The 1911 annual report of the State Health Officer was submitted to the Board and ordered printed.

The abandonment of the use of the word "quarantine" in the management of communicable diseases, was approved and ordered by the Board.

The furnishing of anti-typhoid vaccine to indigent citizens of the State was authorized, and methods of distribution outlined.

The Board authorized a survey of the State in the interest of a campaign for the amelioration of malarial fevers and the appointment of two medical men to conduct this work; also, approved the recommendation of the State Health Officer that medical inspection of schools be developed from the knowledge and experience gained in the malarial survey.

The rules and regulations of the Board were revised and adopted, and ordered printed and promulgated.

The members of the Board visited the new building, the construction of which had just been finished, and accepted the structure and ordered final payments made therefor. The Building Committee (Mr. Christopher and the State Health Officer) were directed to proceed with the construction of a house to care for the various animals used in the laboratory work.

The Board accepted the offer of H. K. Mulford Co. to furnish diphtheria and tetanus antitoxins to the indigent citizens of the State, the Board paying the firm for such antitoxins at State Board of Health prices.

The methods of distribution and administration of hog cholera serum were put upon a different basis, as is explained on another page of this issue.

The State Health Officer called the attention of the Board to certain health legislation enacted in 1911, especially the bill providing that the Board shall establish a hospital for indigent crippled children. Instructions were given for the State Health Officer to confer with various suitable hospitals in the State as to temporarily caring for such subjects until the indigent crippled children applying for such treatment and care should increase to such a number as to justify the expenditure of a sum sufficient to establish the contemplated hospital.

After an adjustment of salaries in the Veterinary Division, and attention to many minor routine matters, the session of the Board was declared adjourned *sine die*.

HOG CHOLERA SERUM

METHOD OF DISTRIBUTION.

In accordance with Chapter 6167, Laws of Florida, 1911, the State Board of Health last August commenced the administration of hog cholera serum, sending its Veterinarians to such points as requests came from; but the number of calls for this service increased so rapidly that it was found impracticable to attempt to detail men oftentimes a long distance to perform this work, and in many cases the Veterinarians

were so busy that compliance with requests was delayed and the owners dissatisfied because of the loss of hogs from cholera.

At the 1912 annual meeting of the State Board of Health the compliance with this statute and methods to be followed were thoroughly gone into, and the work has been placed upon an entirely new basis. The Board now furnishes the serum free to hog cholera agents of the Board. These agents, one or more to the county, administer the serum at a specified cost to the owner, and make reports of their work to this office. The Board also retains its present staff of field Veterinarians who attend to inquiries from those counties in which there is no hog cholera agent and who are always seeking to find men in such counties to recommend for this appointment.

QUALIFICATIONS AND DUTIES OF HOG CHOLERA AGENTS.

The duties of these agents consist in the administration of the serum to hogs for the prevention of hog cholera. In making such appointments the Board requires that prompt and reliable reports of work done shall be made to this office upon forms to be furnished for the purpose, and that the work will be done in strict accordance with the rules to be issued by the State Health Officer and the State Veterinarian.

It should be distinctly understood that the administration of serum to well hogs does not prevent the disease, and to sick ones does not cure it. What it does do is this: When administered to hogs soon after they are exposed to hog cholera and before they have developed the disease it so modifies the course of the disease that few cases die, after which these hogs are permanently immune. But to administer it in the absence of the disease, or to administer it to the sick with the hope of curing is that much waste of energy.

The Board furnishes to these agents, free of charge, such quantities of serum as are necessary for the work of each such agent, but it is required that the disposition of one lot of serum shall be reported upon before another is furnished. The agent is expected to furnish his own hypodermic syringe for the work, and where proper syringes can not be had conveniently or otherwise, the Board assists in procuring these.

CHARGES.

The following scale of charges for administering hog cholera serum when the work is done at a reasonable distance from the residence of the agent, is suggested by the Board, and any radical departure therefrom is to be considered an imposition upon the owner of the hogs and will be sufficient reason for withdrawing the agent's appointment.

10 hogs, $1.50; 15 hogs, $1.75; 20 hogs, $2.00; 25 hogs, $2.25; 30 hogs, $2.50; 35 hogs, $2.75; 40 hogs, $3.00; 45 hogs, $3.25; 50 hogs, $3.50; 55 hogs, $3.75;

60 hogs, $4.00; 65 hogs, $4.25; 70 hogs, $4.50; 75 to 85 hogs, $5.00; 90 to 100 hogs, $6.00; for over 100 head, add the stated charge for each number.

In cases where the distance is great, special arrangements as to charges may be made between the owner and the agent for doing the work.

INSTRUCTIONS.

The hypodermic syringe for administering hog cholera serum should be of about 20 to 30 cubic centimeters capacity and should have rubber fittings so that it can be thoroughly disinfected by boiling.

It is suggested in all cases where the agent is preparing to comply with an owner's request for the administration of serum, that arrangements be made beforehand so that the work may proceed with the greatest dispatch. The owner should be requested to have his hogs penned previous to the arrival of the agent and should furnish at least two men to catch and hold the hogs, as the operator must keep his hands and syringe clean and free of dirt. This he can not do if he handles the hogs.

The serum is to be injected according to the following dosage:

Weight of pigs.	Dose to be given.	Weight of pigs.	Dose to be given.
Small pigs	10-15 c.c.	225-275 pounds	45 c.c.
30- 50 pounds	20 c.c.	275-325 pounds	50 c.c.
50- 75 pounds	25 c.c.	325-375 pounds	55 c.c.
75-125 pounds	30 c.c.	375-425 pounds	60 c.c.
125-175 pounds	35 c.c.	425-475 pounds	65 c.c.
175-225 pounds	40 c.c.	475-525 pounds	70 c.c.

For sick hogs double the dose. In all cases of large doses, small quantities in several places.

The injection is made under the skin on the inside of the thigh where the skin is loose and where there is least fat. The serum should be poured into a cup which has been previously sterilized with boiling water. This cup should be covered to keep out dirt and flies. Before each puncture with the needle the same should be dipped into a solution of formalin, one to four parts of water, so as to disinfect the wound made by the needle and thus prevent abscesses. When the day's work is done, the syringe and needles should be thoroughly washed free of all blood and then boiled for a minute or two. The syringe, however, should not be suddenly immersed in hot or boiling water. After this boiling, it should be taken apart, the rubber plunger and needles dried and greased with carbolized vaseline. By careful attention to these details a syringe will last indefinitely.

PROCEDURE.

When an owner finds or suspects that any of his hogs have hog cholera, he should communicate at once with the State Board of Health at Jacksonville, or with the hog cholera agent in his county, furnishing

information as to the number of hogs, status of the disease, location of the animals, etc., as prescribed by the application form issued by the Board.

Where there is a hog cholera agent in the county arrangements can be made at once for the work. In other cases the Board will detail one of its Veterinarians to the point and the work expedited as much as possible.

In applying for serum or its administration, or in reporting outbreaks of cholera, if the telegraph is used, the message should not be sent collect. This expense is to be borne by the owner or agent.

TELEGRAPH CHARGES

Representatives of the State Board of Health and the people in general are requested to exercise a little more care in sending collect telegraphic message to the office of the State Board of Health. The Statutes of the State provided that "every case of yellow fever, smallpox or [Asiatic] cholera" shall be reported immediately to this office, by wire, the cost of "such telegram to be paid for out of the funds to be provided for the expenses of said Board of Health." It is not necessary that communicable diseases, other than the above, shall be reported by wire to this office, and if such is done there is no direct statutory authority for the State to pay such telegraphic charges. The mails will serve every purpose in reporting communicable diseases except those specified above, unless there should be an extended prevalence or epidemic of diphtheria, scarlet fever or measles, and this latter is not likely to occur. In the event of such an epidemic of these other communicable diseases, if it is imperative that the Board shall take charge of the occurrence, it is probably lawful for the Board to pay for the expense of the telegraph service.

Neither can the Board allow its hog cholera agents to report outbreaks of hog cholera or make requests for more serum by wire, charges collect. If it is deemed advisable to send such telegrams, the agent should bear the expense, as he is the man that is profiting financially by the appointment, and the appropriation for hog cholera serum will not permit of expense other than what is paid for the serum by the Board.

It should be remembered that telegraphic correspondence is unsatisfactory, too, unless the message is lengthy and this entails too large an expense, for invariably this character of message is sent collect—with few exceptions.

The State Health Officer does not desire to appear penurious in this respect, but it does seem to him that all unnecessary expense in connec-

tion with health management should be avoided and averted. In business circles the telegraph is used only for important transactions. It is the effort of the executive office of the Board to conduct the health supervision of the State along business lines.

BILLS FOR EXPENSES IN THE CARE OF SMALLPOX

Those citizens of the State, physicians or lay citizens, who are at times employed for a few days in the care of smallpox under the direction of the State Health Officer, are requested to bear in mind that their bills for such services must be presented promptly in an itemized form and systematic manner. The State comptroller of Florida has indicated to the State Health Officer certain lines that it is necessary for such bills to conform to, and we have therefore devised a form for this special purpose, which will be furnished every time special authority is given anyone to take charge of a case or cases of smallpox for the account of the Board. This is not a question of professional or personal friendship. It is a question of law and necessity. The proper conduct of the financial business of the Board requires a careful rendering of all bills for expenses to be paid by the Board.

Therefore, professional men should not take umbrage when their claims are returned them with the request that they carefully itemize and certify to them. One-half of the claims of this character made against the Board are presented in bulk: "Care of smallpox," so many dollars. Sometimes the number of cases and occasionally the number of days, are stated on original claims. These all have to be itemized to show the names of patients, dates of visits, method of transportation, and character of service rendered, before they will be recognized by the auditing department of the State government.

CATECHISM

QUESTION—When is the time to pray?

ANSWER—Before the devil comes.

QUESTION—When is the time to get vaccinated?

THE UGLY BRUTE

"See that measuring worm crawling up my skirt!" cried Mrs. Bjenks. "That's a sign I'm going to have a new dress."

"Well, let him make it for you," growled Mr. Bjenks. "And while he's about it have him send a hookworm to do you up the back. I'm tired of the job."—*Liverpool Mercury.*

REMOVAL OF THE OFFICES OF THE STATE BOARD OF HEALTH

On March 30, 1912, the State Board of Health of Florida removed its executive offices from 515-517-519 Dyal-Upchurch Building, and its central laboratory from 10-11-13 L'Engle Building, to its new building constructed especially for these purposes.

The lot of land donated to the Board by the city of Jacksonville, on which the building is located, is situate on the south side of Hogan's creek, at the intersection of Julia and West Second streets. Its size is: 337 feet on Bloxham street, the southern boundary; 250 feet on Cedar

street, the western boundary; 450 feet along Hogan's creek, the northern boundary, and 100 feet on Julia street, the eastern boundary, and comprises about two and one-half acres. The public entrance to the lot is on Julia street, as the building faces east—directly at the foot of West Second street.

THE BUILDING.

The Building Committee of the State Board of Health during the latter part of February, 1911, accepted the bid of W. T. Hadlow Company, of Jacksonville, amounting to $29,000, for the construction of the

building. Work had been previously commenced by the committee on filling in the lot with sand.

The plans and specifications as accepted by the committee had been prepared by Messrs. Robinson & Reidy, architects, then of St. Augustine, Florida, but were purchased from the architects, and a superintendent of construction, Mr. Geo. O. Holmes, was placed in direct supervision of the work.

On April 3, 1911, the contractors were authorized to proceed with the work of construction and within two weeks afterward the first piling were being driven. Although the plans drawn by the architects had not provided for piling for the foundation, yet upon making the usual tests it was found that they would be necessary. This caused a further delay in the construction, as well as additional expense. A total of 110 piles of yellow pine were used in this work. The building is entirely of reinforced concrete, faced with buff pressed brick.

The work of filling in the lot with sand, preparing a terraced lawn, etc., is still under way; 17,358 cubic yards of sand having been up to March 1, 1912, placed in the lot.

The outside dimensions of the building are 83 feet 9 inches by 43 feet 2 inches, not including the front steps. The total height from the basement floor to the attic floor is 34 feet 7 inches.

THE OFFICES AND FURNISHINGS.

The purposes to which the various rooms are to be put may be stated as follows: The basement, in addition to having a large open space which will be used for storage purposes and in handling incoming and outgoing freight and express, has on the north a room for the Veterinary division, an incinerating room, a sterilizing room, a dark room for micro-photographic work, an operating room for use in connection with animal inoculation, and a room on the west for the motor which is to operate the refrigerating plant. The heating and hot water furnaces are also in the basement.

The first floor of the building has in its south end an exhibit room. The details of the exhibits are now being planned and within a few months can be opened to the public. The office of the senior bacteriologist, the general laboratory room (at the north), a private laboratory, incubator and cold storage rooms, make up the balance of the first floor.

The second floor of the building is used for the executive offices, quarters being provided for the State Health Officer, his secretary, the Assistant State Health Officer, the stenographer and the bookkeeper. A large room at the north end of the building is used as a library and assembly room. A vault, constructed of reinforced concrete, opens

into the bookkeeper's office. An operating room, for vaccinating against smallpox, typhoid fever and rabies, is also provided.

The attic at present is in an unfinished state, but is being used for transferred files and vital statistics.

The offices of the State Health Officer, the Assistant State Health Officer, the library and the senior bacteriologist are each to be furnished with "Mission" style, early English finish furniture, all other offices to have golden quartered oak. The fixtures in the veterinary division and the general laboratory rooms have been constructed of plain white oak, except that all shelves, backs and interior construction are of yellow pine, and interiors of drawers of birch, with fumed oak finish. All file cases throughout the building are of steel.

With this expansion in the quarters of the Board there will be a corresponding increase in the work, for it is intended to extend the scientific research work of the Board to include an investigation and survey of the State with regard to latent malarial carriers, special work on rabies, infantile diarrhoea, latent gonorrhea, the common drinking cup, the bacterial flora of cities and towns in the State, and probably anti-venin work; also, a study of bovine uncinariasis and its relation to hookworm disease in the human; an extension of the distribution of public health literature, the establishing of a press bureau, etc. Plans are now being prepared for an "animal house" to be located on the same site as the building, which will provide commodious and sanitary quarters for the various animals necessary in the bacteriological work of the Board.

A certain man took the advice of one of his anti-vaccination friends instead of his doctor.

Then when he got smallpox he sent his anti-vaccination friend the following fable, copied from Aesop:

THE FOX AND THE KID.

A kid strayed away from the herd—a long way. And first he knew he was face to face with a fox. The kid saw that it was too late. So he made the best of the situation. He said to the fox: I see that I am doomed to die, but I would die as pleasantly as possible. Won't you take your pipe and play me a little tune, for I would fain die to music. So the fox took his pipe and played and the kid began to dance. The fox enjoyed the sport and kept up the playing. But the dogs were attracted by the noise and soon on the spot, whereupon the fox got away the best he could. "By my foolishness," he said, "I have lost my kid." This shows the folly of a man not sticking to his own profession. *"I should have played the butcher instead of the piper."*

CONSIDERATION FOR WIVES

We needed a little repair work done at the Anti-vaccination Hospital. There were some forty anti-vaccinationists out there that had depended upon soap rather than vaccination, howbeit, you would never think now that they knew what soap is.

So we put a little ad in the Metropolis: "Wanted: A carpenter to do some repairs. Apply State Board of Health." Carpenters came thick and fast. There seems to be a good many carpenters ready to do repairing at the present writing.

The first five or six were asked if they had been vaccinated, and when they replied that they had not, they were dismissed. Finally, one applied that had been an inmate out there. He was accepted. But still they came. It was then that we began to answer them simply by saying it is out at the Pest House. (That is what they call the place where the unvaccinated go, or as the antis term it, the "unwashed.") It was amusing to see them back out of the office. At the mention that it was at the Pest House, applicants seemed to think they had already struck it in the middle and the quickest way out of the office the best. Some of the bolder assured us that they were not afraid of it, but that the wife would be. Who said wives are not treated with due consideration?

SANITARY REPORTS

The State Health Officer has received, and desires to express thanks for, annual reports regarding 1911 sanitary conditions in the State, from the following County Agents of the State Board of Health:

Dr. J. H. Hodges, Gainesville, Alachua County; Dr. J. F. Curtis, Macclenny, Baker County; Dr. A. H. Freeman, Starke, Bradford County; Dr. J. H. Chiles, Floral City, Citrus County; Dr. L. C. Fisher, Green Cove Spring, Clay County; Dr. J. M. Jackson, Miami, Dade County; Dr. R. L. Cline, Arcadia, DeSoto County; Dr. J. H. Pierpont, Pensacola, Escambia County; Dr. B. B. Blount, Carrabelle, Franklin County; Dr. R. D. Tompkins, Jasper, Hamilton County; Dr. W. H. Cox. Brooksville, Hernando County; Dr. C. W. Bartlett, Tampa, Hillsboro County; Dr. J. D. Gable, Bonifay, Holmes County; Dr. Theop. West, Marianna, Jackson County; Dr. W. D. Bush, Leesburg, Lake County; Dr. F. C. Moor, Tallahassee, Leon County; Dr. J. H. Coffee, Cedar Key, Levy County; Dr. L. C. Ruter, Madison, Madison County; Dr. Jos. Halton, Sarasota, Manatee County; Dr. W. V. Newsom, Ocala, Marion County; Dr. P. P. Pillans, Orlando, Orange County; Dr. M. J. Hicks, Kissimmee, Osceola County; Dr. C. M. Merrill, West Palm Beach, Palm Beach County; Dr. E. W. Warren, Palatka, Putnam County; Dr. H. Mason Smith, Milton, Santa Rosa County; Dr. E. S. Estes, St. Augustine, St. Johns County; Dr. S. C. Wood, Webster, Sumter County; Dr. John Mac-

Diarmid, DeLand, Volusia County; Dr. C. B. McKinnon, DeFuniak Springs, Walton County; and Dr. F. C. Wilson, Chipley, Washington County.

The following cities have also this year made a report to the State Health Officer of health conditions in their communities during 1911:

Daytona, Dr. G. A. Klock, City Health Officer; Jacksonville, Dr. C. E. Terry, City Health Officer; Key West, Dr. S. D. W. Light, City Health Officer; Madison, Dr. D. H. Yates, City Physician; Ocala, Dr. E. Van Hood, President Board of Health; Orlando, Dr. W. C. Person, City Physician; Pensacola, Dr. Wm. D. Nobles, City Health Officer; Punta Gorda, Dr. Geo. S. Stone, City Health Officer; St. Petersburg, Dr. M. H. Axline, City Health Officer; South Jacksonville, Dr. D. B. Williams, President Board of Health, and Tampa, Dr. Sheldon Stringer, City Health Officer.

All these reports will be published in the Twenty-third (1911) Annual Report of the State Board of Health and will form a valuable index to health conditions as they existed in the several counties and cities mentioned during the past year.

EXAMINATION FOR EMBALMERS' LICENSES

The State Board of Embalmers' Examiners will conduct the spring examination for licenses on Thursday, May 16, 1912, commencing at ten o'clock a. m., in the State Board of Health building, at Second and Julia streets, Jacksonville.

Information in regard to the examination may be had upon application to the State Health Officer.

A doctor friend, resident of Florida and living not many hundred miles from the Executive Offices of the Board, and who evidently is a close reader of the HEALTH NOTES, writes as follows:

DEAR DOCTOR—I want you to know that the Board's attitude towards smallpox challenges my admiration. I keep up with ..... spiel but the anti-vaccination cranks are getting it hard these times. Their arguments only they have left them. The proofs are all on the other side. I am mean enough to actually enjoy the situation. I would not, if I could, have compulsory vaccination. That would spoil all the fun. I would have vaccination offices at the head of long flights of stairs and all who did not scale those stairs two steps at a leap, I would attach a fee of not less than five dollars, payable strictly in advance.

I have no compromise to offer or accept when I am on the right side of a righteous cause. Every dollar spent in isolation, detention and quarantine is public money squandered and it satisfies my heart to know that one State Board of Health is wasting very little good money along these lines.

Regards, to you, etc.

Slowly but surely the people are waking up in spite of the "soap and water" advocates of smallpox prevention; the sensible people of Florida are beginning to realize who are the really—not make-believe-

friends of the State, and in whom they can place full confidence. The State Board of Health has never "juggled" with facts. What it advises the people to do or not to do, has been gotten from experience, patient study and, finally, knowledge of the subject. Health problems are worked out to their ultimate analysis before being submitted to the people for adoption, and it is reasonable to think, and, what is more, to believe, that no one short of an idiot would accept the "sayings" of a maliciously prejudiced writer on any subject rather than those of a student of the question. The common sense of the people is working and truth is leavening public opinion. It probably will be a slow process but "truth is mighty and will prevail."

[ADVERTISEMENT?]

ANTI-VACCINATION RETREATS

OF THE

STATE BOARD OF HEALTH OF FLORIDA

Open All the Year for Obstinately Prejudiced or Indifferent People.

Rates: No charge to guests of the State Board of Health. Service and medical attention free.

Vaccinated persons not wanted as guests and only admitted as callers.

Separate buildings for races. Separate wards for sexes.
Absolute isolation assured.

Duval County:
The "Sand Hills" are 3½ miles from Jacksonville. Telephone communication. Negro guests usually style this Retreat "The Pes-House."

Hillsboro County:
The "Pest House," as it is popularly known, is about two miles from Tampa and is located on the Hillsboro river. Live oaks and Spanish moss especially attractive. New building just completed for white guests.

Escambia County:
Special attention is given to guests here, for a majority are infected migratory negroes from bordering States. Located four miles from Pensacola.

Dade County:
Three miles from Miami. As no guests have lately been cared for here, new plumbing and a new kitchen have been provided.

While a majority of our guests are of the negro race, yet special, separate and commodious accommodations are provided for whites of both sexes.
Prompt, efficient, vaccinated employees.

The names of our guests are not given to the newspapers—but they ought to be!

FLORIDA'S TRIBUTE TO THE ANTI-VACCINATIONIST!

For further information apply to
The State Board of Health,
Jacksonville, Florida.

TAKE YOUR CHOICE

One little
vaccination mark
—like this—
OR
Thousands Of Smallpox Pustules Like These

Smallpox—the most loathsome of all diseases.
[From photographs]

VACCINATION PREVENTS SMALLPOX

Protect the little children.

Department of Health, Chicago — Educational Series.

FLORIDA

Health Notes

OFFICIAL BULLETIN

Published Monthly by the

STATE BOARD OF HEALTH

Subscription 50 Cents per Annum

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Sent to any address in the State for the asking.

If you receive it without asking, it means that someone else has requested it for you.

When you change your address drop us a card.

When giving change of address, give both the old and the new.

Anything you want to know about the public health we will try to tell you.

Any information you want about communicable diseases of domestic animals we will help you to get.

Address communications to Jacksonville, Fla.

We seek the dissemination of information with regard to the practical conduct of life, so as to remove the ills which are due to simple ignorance.

—Ex.-Gov. Charles E. Hughes.

The Record Co. 48809 St. Augustine, Fla.

CIVIC CLEANLINESS

Some one has said that the earliest attempt to institute a government or to govern, of which the world has any knowledge, was when Adam made an ineffectual effort to control Eve's appetite for fruit. The allegory says that he made a dismal failure, and no doubt but mankind in general and man in particular has been grateful for his defeat. The unit of all control was unquestionably at the beginning of things even as it is now, the FAMILY, and as families increased the tribal authority was recognized as needful in providing a supervision over home life and likewise a safeguard against enemies. That the tribes might preserve their autonomy of control and so effect a satisfactory and harmonious blending of mutual interests, the authority and power of dictation and guidance was vested in one man—the CHIEF—who arbitrarily directed and provided for the welfare of his people, and kept within due bounds the inherent vices and faults of his clan. Then as the world grew and the tribes increased, they, too, combined, with one head of control and management. From this combination of people speaking the same language and having similar customs and habits, nations have sprung whose authoritative heads, either as kings, queens, or presidents, are but the exponents of some method and manner of government, for civilized man recognizes, without some form of government to keep man within due bounds of rightful living, that immorality, crime and greed would soon disorganize society. It matters not, therefore, under what flag the authority is exercised, whether monarchy or republic, the aim and purpose is the same: the preservation of the race, and the establishment of peace, comfort and health.

These "thoughts aloud" jotted down in a somewhat random manner, are purposed merely to emphasize this idea: that after all, it is in the home itself where governmental action intended for the protection of man against himself, has come and must continue to receive a ready and willing spirit of cooperation, else the design of united effort for effecting good to the whole people will signally fail.

Single out one of the many purposes of government; that of protecting the health of people against insidious disease or harmful articles of food, and a careful consideration of the subject must suggest itself to any one enough interested to think at all on the question, that it is in the home life that measures of cleanliness and sanitary efforts must be first instituted, the principles of which if spread from house-

hold to household as a contagious maxim, will make easy of execution any rules which the municipal authorities may ordain.

The question has been asked of the State Board of Health, "How to clean a city and how to keep it clean and sanitary?" This query may be answered in two ways: First, by educational and "show me" methods. Illustrated lectures on subjects of interest in the way of sanitary work, and a campaign of education along this line by Civic Associations and Improvement Societies, and more than all else individual example and practice will give ocular proof of what it is possible to accomplish without having to resort to the courts. Secondly by organizing an efficient Board of Health and placing in the hands of an aggressive Health Officer ample authority to deal with all matters in all efforts to improve the health of his community.

When it is proven to a citizen or to a community that screened surface closets have decidedly lessened the number of typhoid cases within a certain radius, or that screened kitchens and dining rooms have prevented likewise the occurrence of fever cases within the household, or that screened sleeping rooms, or netting closely tucked in about the bed, have cut down the number of cases of "chills and fever" in a malarial mosquito infested locality, where formerly there was constant sickness in the family throughout summer, more will have been accomplished in the way of convincing argument than scores of letters could have effected. So, too, when a livery-man has been persuaded to try the closed manure bin and he sees the decrease in flies which follow this method of disposal of the "droppings" of the stables, he needs no further proof or discussion of the subject, that flies breed principally in horse manure and can be reduced in number when proper attention is paid to a sanitary disposal of manure, for his eyes have seen what can be done and experience has taught. In the same way that the livery-man is convinced can a house-wife be also forced to accept the proof of a diminishing number of flies when the garbage can has a tightly fitting cover. These are a few of the pictures which could be drawn and which when presented to the observing citizen are potent in argument and convincing in proof, that due attention paid to matters of sanitary supervision will bring valuable returns in comfort and in health.

"How to clean a city and keep it clean" is not an easy matter unless the cooperation of the entire community is enlisted and obtained. Where the people give aid the task is not difficult, and gratifying results rapidly show up from the efforts put forth. But when requirements of cleanliness have to be enforced solely through legislative and police action, then it is an up-hill work and it is only through

frequent administrations of the "big stick" of the law, that indifference on the one hand and downright perverseness on the other, can be brought to realize that both health and life are assets, which contribute to the happiness and wealth of any community and should not be trifled with.

TYPHOID VACCINE

The following circular in regard to Typhoid Vaccine has been prepared as information to those applying for this vaccine:

Typhoid vaccine when requested will be furnished by the State Board of Health under the conditions named below. The vaccine together with any good hypodermic syringe and a little bottle of alcohol for sterilizing purposes, completes your equipment.

The essential things to observe are, first, that the complete vaccination consists of three injections, ten days apart; second, the vaccine is accordingly put up in three ampoules; one ampoul contains 500 million dead bacteria which should be given the first dose, and the other two contain each 1,000 million dead bacteria and are for the second and third doses; third, the site of the injection is the upper arm at the insertion of the deltoid, well under the skin and yet not into the muscle; fourth, the needle should be sterilized before each injection and the site of the injection likewise sterilized, all of which can be done by washing with alcohol.

The vaccine should be shaken well before using and should be drawn from the ampoul directly into the syringe. Under no circumstances should the ampoul be heated. In the case of long necked or hermetically sealed ampouls, the neck can easily be broken off, but in the short necked, the rubber stopper should be taken out.

The most suitable time for administration of the vaccine is about four o'clock in the afternoon, as the greater part of the reaction is then over before morning.

No applicant should be vaccinated who is not perfectly healthy and free from fever at the time, and it is advisable, in case of doubt, to take the temperature and to examine the urine; in the case of any one who has fever or any other signs of illness, it should be postponed until after recovery. This precaution is necessary to avoid the vaccination of those who might be coming down with typhoid.

Applicants should be cautioned not to drink beer or liquor on the day of treatment.

There is usually some headache and malaise, and a local reaction consisting of a red and tender area about the size of the palm of the hand, and sometimes tenderness in the auxiliary glands. The entire reaction is over in forty-eight hours or less.

Some individuals may be very susceptible and develop a severe general reaction (headache, backache, nausea, vomiting, herpes labialis and rarely albuminuria, and some loss of body weight). The number of severe reactions has been exceedingly small, and regardless of their severity they all disappear

completely inside of forty-eight hours. If any severe reactions occur you are desired to report upon them in detail.

Every person vaccinated is to be reported on Form 224, Case Record, and this report sent to this office for file. A duplicate may be retained by you as a record of persons vaccinated against typhoid if you so desire. Blanks are enclosed, and more will be furnished on request to this office. In filling out the record card it is not expected that the temperature of every person will be taken; many of them will have no special symptoms and will not come to you unless directed to do so, and the reaction in such cases can be set down as none or mild, according to the history. It is, however, desired that the temperature of all those who report sick be taken and recorded.

Three doses undoubtedly give better protection than two. An interval of ten days between doses has been adopted, because experience shows that nothing is gained by giving the doses closer together. The production of large quantities of specific anti-bodies does not become evident until about eight to ten days after vaccination; the second dose is therefore not given until the first has become effective, since there may be a temporary fall in the quantity of protective bodies present in the serum after the administration of the second and third doses. We do not believe that there is any increased susceptibility following the first dose, but that increased resistance begins immediately, although the degree of immunity produced is not very high until after the lapse of ten days.

If it is not convenient to give the second dose at the regular time it may be postponed up to the fourteenth day, but it is not well to wait longer than this if good results are to be obtained.

The vaccination is well borne by larger children and by women, using doses proportioned to the body weight, taking one hundred and fifty pounds as the unit. Women should not be given dose during or near the time of the menstrual period.

The Widal reaction is always positive after anti-typhoid vaccination; it appears in about ten days after the first dose and remains positive for six months to a year. This fact must be considered in diagnosing typhoid in vaccinated persons; they give a positive Widal regardless of the nature of the illness, and the reaction is consequently of no assistance in making a diagnosis. If typhoid is suspected the diagnosis should be confirmed by blood culture.

The vaccine should be stored in the ice-box until used and will keep for six months and perhaps longer when it is stored at low temperature in the dark, but it is our plan to keep a fresh stock on hand at all times and it should be administered soon after it is received by you.

No special effort need to be made to vaccinate those who have already had typhoid fever, or those over forty years old. Surplus vaccine may be returned to the State Health Officer, Jacksonville, Florida.

CONDITIONS UNDER WHICH TYPHOID VACCINE IS FURNISHED BY THE STATE BOARD OF HEALTH.

The State Board of Health will furnish, free of charge, typhoid vaccine, upon the following conditions:

1st. It is to be used with the indigent.

2d. It is to be used for prophylactic purposes only.

3d. It is furnished for those who have not had typhoid fever.

4th. It is to be administered by the family physician.

5th. The physician is to furnish a case record of the vaccination, on form 244, at termination.

(The above circular of instruction is based upon the experiences of Major F. F. Russell, Medical Corps, U. S. Army, and is a modification of a circular issued by him.)

NOTICE!

DIPHTHERIA ANTITOXIN CHANGES

The State Board of Health has effected an arrangement with the H. K. Mulford Co., by which diphtheria antitoxin will be furnished to the indigent at a little less than half of what it has cost heretofore. The process is very simple. When a physician has an indigent case he prescribes antitoxin as usual. The druggist has the antitoxin and he has the blanks.

Now it takes three people to fill the blanks: the parent, the physician, and the druggist. They are all concerned where a child has diphtheria and it is an easy matter to get the blanks filled.

That done, the physician takes the antitoxin and gives it to the child, and the druggist takes the blanks filled out properly and sends them, one to Mulford, one to the State Board of Health and one he keeps. When Mulford gets his he sends a like amount of antitoxin to the druggist to replace that which the druggist has let go. That squares up the druggist account, only Mulford gives him ten per cent of the value of the antitoxin for his trouble. He credits the druggist's account with that much.

Then Mulford sends a bill to the State Board of Health for all the antitoxin he has sent out to druggists in that way, and the State Board audits and pays the bill. See?

Following is a copy of Mulford's letter to the druggists telling them all about it:

DEAR SIR—We are pleased to advise that arrangements have recently been completed with the Board of Health of your State to supply our antitoxin to the indigent, free of charge.

In most States where free antitoxin is distributed, distribution is made through special agents or through the local Board of Health, but the method adopted by your State Board enables every druggist handling Mulford's antitoxin to distribute antitoxin to the poor and does not discriminate against any one, and at the same time enables the druggist to co-operate with the State and local physician to confine the distribution of free antitoxin to the poor.

Inclosed please find sample of blank that will be distributed to physicians by the Secretary of the State Board of Health. When antitoxin is desired to be

used on a poor patient, you will receive a similar blank duly filled in and signed, and on forwarding this to our home office, Philadelphia, we will send you antitoxin, charges prepaid, to replace the amount distributed, together with a credit of ten per cent handling charges, based on the following special prices charged your Board of Health:

1,000 units	$ .50	5,000 units	$2.00
2,000 units	.95	7,500 units	3.00
3,000 units	1.35	10,000 units	4.00
4,000 units	1.70		

Those special prices are quoted to enable free distribution to be made to the indigent, and we hope our efforts to bring about co-operation between the State Board of Health, the druggists and ourselves as manufacturers will receive your earnest support in limiting the spread and curing of diphtheria cases occurring in the indigent of your community.

As this method of distribution protects all interests concerned, may we expect to receive your hearty co-operation with your State and local Boards of Health in distributing antitoxin for the indigent suffering from or exposed to diphtheria, on the above basis.

Knowing that you will protect our mutual interests in limiting free distribution of antitoxin to the poor so that it will not be taken advantage of unfairly, we are,

Very truly yours,

H. K. Mulford Company.

INSTRUCTIONS TO REPRESENTATIVES OF THE STATE BOARD OF HEALTH

Circular 46, Revised March, 1912.

As Representative of the State Board of Health, and Health Officer, in and for the county for which you have been appointed, it is expected that:

1st. You will keep yourself and the State Board of Health well informed of the general health and sanitary conditions of the different sections of your county.

2d. You will do all you can to aid and promote the cause of public health in your county.

3d. You will be the State Board's representative, and as such to you will be referred matters of local interest demanding investigation and remedy.

4th. You will exert your influence towards having the Rules and Regulations of the State Board of Health observed, and it is reasonable to expect that you will exercise this requirement.

5th. You will endeavor to personally encourage a sentiment in favor of vaccination and re-vaccination against smallpox, of the in-

habitants of your section, particularly school children and factory operatives, for vaccination is the only preventive of smallpox.

6th. The State Board of Health will expect from you as often, and in as full and detailed a manner as possible, a report on the general health, sanitary necessities, hygienic conditions and like matters, bearing on the public health of your county; and especially so at the end of each year.

7th. In the case of any reports of suspicious communicable sickness, you will at once investigate the same, and if found to be smallpox, yellow fever or cholera, a report shall be made to the State Health Officer by telegram, charges collect; in all other communicable diseases, reports shall be made by mail; or if made by telegraph, the charges shall be prepaid. The Statutes do not authorize the Board to pay telegraph charges for reports of diseases except as specified above. The patient, if necessary, shall be isolated, and the disease managed in accordance with the Rules and Regulations of the State Board of Health.

The State Board of Health, under the statutes, can only pay for the care of those indigent patients suffering from smallpox which have been reported to the State Health Officer and which professional care has thereupon been authorized by the State Health Officer; and in such cases the Board will pay a per diem of five dollars for your professional services, or a proportion of that amount for fractional days. When rendering bills for such service Form 221 of the Board should be used and strictly followed in all its details. Unless these requirements are complied with, the Board can make no payment for services nor reimbursement for expenses incurred. It will be found that the form referred to has upon it a Certificate of Claims to be signed by you when rendering your bill for service. This may seem rather strict upon a professional man, but it is not a strict requirement between an officer in charge of work of the Board and the State Health Officer in charge of the disbursement of State funds. It is a matter of business and is required by the State Comptroller and advised by the Attorney of the State Board of Health.

Therefore, at the time you report an initial case of a communicable disease, especially smallpox, you should state whether or not you are willing, in accordance with these instructions, to take charge of the situation. If unwilling, and it is not feasible for the State Health Officer to detail one of the field staff of the Board, and if the situation is serious, other arrangements will have to be made for representation at the time.

The desirable qualities in a health officer are firmness, decision, self-possession and good judgment, and these if linked with kindness, attention and carefulness in detail of work, can never fail to inspire confidence, without which a health officer's work will be barren of good results. "Give every man thine ear, but few thy voice," is as excellent advice to a health officer as it was to the son of Polonius. Pay respectful attention to all complaints and listen to all rumors, but be slow to make decision, carefully and calmly weighing all facts. In times of suspicious or epidemic sickness, at home or abroad, maintain a cool head and calm deportment. Do not yourself, and discourage in your associates in health matters any inclination to indulge in mysterious nods, whisperings and secret meetings. Such a course inspires distrust instead of confidence, and alarms the timid and nervous. Be frank, truthful and candid with the people and they will show their appreciation of your acts by evincing additional confidence and faith in your ability and authority, and by attending to their business cares, thus permitting you to discharge yours without annoying and harassing suggestions.

Sanitation and hygiene being the co-partners of education, it is necessary, therefore, that the health officer should be a teacher in this line. Every opportunity should be embraced by you to impress the public and its servants, county officials and the town council with the necessity for cleanliness in cities and the benefits to individuals and communities always resulting from the observance of hygienic and sanitary laws.

Respectfully,

JOSEPH Y. PORTER,
State Health Officer.

THE ONLY GOOD THAT QUARANTINE ACCOMPLISHES

The following is credited to a native of Kansas who, according to the *Housekeeper*, sent to a paper in that State the following note of thanks:

I wish to thank the city authorities for quarantining my family and me for three weeks recently because one of them had the smallpox. During that time my wife caught up with her sewing; we had three square meals a day, as no one came in and she was not permitted to leave; we enjoyed three weeks of good nights' sleep; and, best of all, a cousin with four children had arranged to visit us, saw the smallpox sign on the door, and left town so scared she will never come back again. So for these and other blessings we are very thankful for the quarantine.

MODEL FLY ORDINANCE

HOW TO GUARD AGAINST THE DISSEMINATION OF DISEASE GERMS BY THE WINGED PESTS

(Prepared by the Indiana State Board of Health and Recommended to All Cities in That State for Adoption.)

WHEREAS, It is commonly known that flies are very dangerous carriers of filth, filth poisons and disease germs, that they are born in filth, and are a constant threat against the health, happiness and prosperity of the people; therefore,

Section 1. Be it ordained by the mayor and council of the city of..... that it shall be unlawful for any person, firm or corporation to suffer or permit or have upon their premises, whether owned or leased by them, any one or more of the following unsanitary fly-producing, disease-causing conditions, to-wit: (1.) Animal manure in any quantity which is not securely protected from flies; (2.) privies, vaults, cesspools, pits or like places, which are not securely protected from flies; (3.) garbage in any quantity which is not securely protected from flies; (4) trash, litter, rags or anything whatsoever in which flies may breed or multiply.

Section 2. It shall be the duty of the chief of police or city marshal and health officer, upon learning in any way whatsoever of the existence of one or more of the unlawful conditions described in Section 1 of this ordinance, to notify the offender in writing upon order blanks provided by the city clerk, to remove or abate said unlawful conditions, stating the shortest time for such removal or abatement. In the event of the refusal or neglect on the part of the notified offender to obey such order, the chief of police or health officer shall inform the street commissioner upon blank provided by the city clerk, and it shall then be the duty of said street commissioner, and he shall have power and authority, to remove and abate the reported unlawful conditions; and he shall keep an accurate account of the cost and expenses thereof, which shall be paid from the city treasury upon the sworn vouchers of the street commissioner, and said cost and expenses shall be a lien upon the property and shall be collected by law as taxes are collected and duly paid into the city treasury.

Section 3. Any person, firm or corporation found guilty of having created or suffered to exist on premises either owned or leased by them any one or more of the unlawful conditions named in Section 1 of this ordinance shall be punished by a fine of not less than five or more than fifty dollars.

Section 4. All ordinances or parts of ordinances in conflict with this ordinance are hereby repealed; and whereas an emergency exists, this ordinance shall be in effect on and immediately after its passage.—*The Fly Fighter.*

NOTICE

It is a violation of the U. S. Postal regulations to send laboratory specimens through the mails improperly packed. If the laboratory examines such improperly packed specimens, it becomes a party to the violation. To do so is to run the risk of having such specimens barred from the mails. This the Board cannot and will not do. So bear in

mind: THAT SPECIMENS IMPROPERLY PACKED WILL NOT BE EXAMINED.

Again: The Board furnishes both containers and record blanks for all specimens, and for all classes of specimens. These are sent out upon request. All specimens submitted for examination should not only be properly packed, but should be accompanied by the data asked for on the record blank. Failure to observe this is to run the risk of having report upon specimen delayed.

Again: All specimens should have sufficient postage to ensure delivery, else that may also result in delay.

Again: (And this is important) Each specimen should have the data on its own appropriate blank, and not on some other form. That is, tuberculosis specimens should be accompanied by a tuberculosis blank, and not by a hookworm blank.

Please read all this over again. It is important.

GRADUATE NURSES ORGANIZED

The NOTES has just received the following notice:

The graduate nurses throughout the State have lately formed a State association, whose aim should be to raise the standard of nursing in training schools and in private work, to eliminate the undesirable nurse whose conduct is unprofessional, to secure for the nurses of Florida State registration, whose benefits will affect the public, the doctor, and the nurse. We do not wish to prevent any one from practicing nursing, but wish to regulate the practice, that the trained woman may be distinguished from the untrained one. The nurses of Florida are cordially invited to become members of the Florida State Association of Graduate Nurses. Blanks can be procured from the secretary, Miss Nan O'Brien, 26 East Second Street, Jacksonville, Fla.

U. L. FLANAGAN, *Corresponding Secretary.*

To resort to a hackneyed phrase, this is a step in the right direction. It will redound to the benefit of every class concerned, except one. Those concerned are: the public, the physician, the good nurses, of which Florence Nightingale was a type; and the otherwise nurses, about which the less said the better. It is only that latter class that will not be benefited by this movement.

If cholera gets into your herd of hogs notify the State Board of Health, Jacksonville, at once. The time to inoculate hogs against cholera is immediately after the disease gets into the herd. To do so before it gets there is to lose the serum; to wait later is to lose the hogs.

THE REPORT OF NATHAN STRAUS TO PRESIDENT TAFT

President Taft exhibited good judgment in sending Nathan Straus to Berlin to attend the "Third International Congress for the Protection of Infants," last December. He couldn't have sent a saner man.

Now this is what Straus said of the congress, and incidentally of some other things:

27 West 72d Street, New York, December 20, 1911.

The President, Washington, D. C.

My Dear Mr. Taft—Pursuant to your instructions I attended the Third International Congress for the Protection of Infants, held at Berlin September 11-15, 1911, as official delegate on the part of the United States. As the representative of America I was accorded marked consideration by Her Imperial Highness, the Empress of Germany, under whose patronage the congress was held, and she expressed the keenest interest in the efforts that are being made in our country to protect the lives of the infants, and in the efficient work that is being done by your administration to promote the public health.

I had the honor to present to the congress a report on "The Progress made in America in the Protection of Child Life," and in my individual capacity as a member of the congress I submitted a brief paper on "Twenty Years' Practical Experience in Modifying and Pasteurizing Milk for Infant Feeding." A copy of each paper is attached to this report.

Particular interest was aroused by my report of the activity of the American government in investigating the causes of excessive infant mortality and in finding practical methods of preventing unnecessary sickness and death among the babies. The French delegates, coming from a nation that appreciates more keenly than any other the value of an infant life, were particularly ready to commend the able pioneer work of the United States public health service and of the department of agriculture. Those of the members of the congress who were connected with public health agencies in their several countries were familiar with much of the work done by the American public health service.

Some of them took pains to tell me that no reports on public health questions rank higher among experts abroad than the volumes embodying the results of the milk and typhoid fever investigations by the public health service and the monographs by Drs. Schroeder and Mohler on their investigations into the transmission of tuberculosis from cow to man. I found that these two names, with those of Drs. Wyman and Rosenau, were regarded abroad as typical of authority and progress, and as putting America in the very front rank among the nations that are seriously grappling with the problems of the prevention of disease.

So cordial were the expressions of appreciation that I feel warranted in believing that the news of the death of the surgeon general of the public health service was received with genuine grief in the foreign health offices and that the passing of Dr. Wyman from his sphere of beneficent activity was regarded as a calamity to the world at large.

I attended all the sessions of the congress and followed the papers and discussions with care, in the hope that I would be able to bring back some practical

ideas on the prevention of sickness among infants, for incorporation in the report that you desired me to submit.

But for the most part the papers presented had little to do with the prevention of sickness. Methods of treating the diseases of children were discussed at length, but it would be foreign to your purpose for me to attempt to synopsize the array of cures brought before the congress.

Neither would it be to your purpose for me to recite the ideas on institutional management put forth at the congress, or to tell of the papers that dealt with such elementary principles of hygiene as personal cleanliness, or that discussed what nurses ought and ought not do in the care of babies.

Upon one subject much stress was laid, namely, upon the necessity for accurate and uniform vital statistics. I gathered from the discussions that America is quite abreast of the other nations in the registration of births, deaths and epidemic diseases, and that no government issues better statistical reports than those that are put forth by the United States census bureau. The extension of the registration area to cover the entire country is greatly to be desired.

That which most impressed me at the Berlin congress is the vital importance of directing the attention of the world at large and of the health officers of cities and nations to the duty of preventing disease. It seemed significant that delegates from two score nations, representing practically all the civilized world, could meet to discuss "the protection of infants" and devote the bulk of their time to debating what kind of pills to give the babies. The treatment of sick babies can be trusted to the doctors. What is needed is the prevention of sickness.

Infantile death rates the world over are needlessly high, not because of lack of skill on the part of the physicians, but for the simple reason that the babies are recklessly infected with diseases. Efforts to prevent these sicknesses, beyond the elementary expedient of quarantine, are made in only a few cities, and no nation except the United States has, as a nation, attacked the sources of the sicknesses that slay the little ones.

The searching investigations by the public health service and the agricultural department have proven that typhoid and scarlet fevers, diphtheria, tuberculosis, sore throat and summer complaint are often caused by raw milk, and that the transmission of these diseases through this common food of babies may be prevented by efficient pasteurization of the milk. I mention this because it illustrates the advanced position of this government in seeking to prevent disease. The only parallel to these investigations is that conducted by the British government into the relation of bovine and human tuberculosis, an inquiry that was anticipated at every step by the American government in the work of Drs. Schroeder and Mohler, and by the independent investigator, Dr. Ravenel, and their findings were verified in every particular by the British royal commsision on tuberculosis.

In one other respect America is happily in advance of the times in having at Harvard University the only scholastic department in the world devoted to the prevention of diseases, the chair being occupied by Dr. Rosenau, trained in the government service and now the foremost exponent of scientific measures to attack sickness at its sources.

I mention these considerations as vindicating the propriety of America taking the lead in the world-wide movement to strike at the roots of disease. To launch such a movement I respectfully suggest to you, as the matured result of my

observations at the Berlin congress and at other similar conventions, that you call an *International Congress for the Prevention of Disease.*

Such a gathering, held under your patronage, would call together the men in all parts of the world who are fighting the causes of disease, as distinguished from the physicians who are engrossed with combating the effects of disease.

That there is need for such a congress is illustrated by the fact that there is no international body that gives more than passing attention to the prevention of disease, yet confessedly this is of far greater importance than the doctoring of the sick, for prevention means the delivery of great numbers of people from the whole train of evils that follow the seizure of one of a family with sickness.

It seems to me that by bringing together the great sanitarians, health officers and others identified with the work of prevention, in a congress in which the discussion of methods of treatment would be forbidden, you could bring rich blessings upon the whole world, and could round out the first term of your presidency by setting in motion influences that would save hundreds of thousands of lives in the years to come.

That there is necessity for conference on methods of preventing disease has been recognized by the instructive annual conventions of the American Public Health Association, by the periodic conferences of State health officers instituted by the late Dr. Wyman and by the establishment of a section of the American Medical Association for the study of prevention.

This need of the age has been recognized also in the incorporation of the word "prevention" in the titles of associations formed to deal with tuberculosis and infant mortality, but it has been the unfortunate experience of these praiseworthy movements that the vital necessity for prevention has been forced into the background by the eagerness of medical delegates to discuss methods of treatment and by the zeal of professional charity workers to expound their plans of organization and of institutional work.

In order that the subject of the prevention of disease should have the opportunity for discussion that its vast importance demands, it is necessary that this matter be made the sole purpose of a gathering of scientists and publicists, at which no subsidiary issue shall have hearing.

I am sure that it will stir you profoundly to contemplate the good that such a congress could achieve—the potentiality of such a movement for the benefit of the human race, and I hope that your wise and far-seeing statesmanship, which has made so mightily for the public weal, will dictate the assembling under your inspiring leadership of a congress that will mark an epoch in the promotion of the public health.

Very sincerely yours,

NATHAN STRAUS.

PLASTER AND PEROXIDE

It is difficult to imagine a small investment that will yield better returns in the rearing of a family of children than a roll of adhesive plaster and a bottle of peroxide of hydrogen. Every family should be so equipped. The children should all be taught how and when to use it. It will save many an infective sore.

Every time a wound is sustained, wash it well with clean water. Then apply peroxide of hydrogen freely. Then dry it well and bind it up with a plaster of adhesive strip. I know a little boy whose skin goes patched with adhesive plaster pretty much all the time. Sometimes he has several patches at a time. But he never has an infected sore. His wounds all recover promptly. It is best to get adhesive plaster half an inch wide and five yards to the roll. Get peroxide of hydrogen in quarter-pound bottles and keep it well stoppered.

URINALYSIS

Urinalysis is not strictly public health work. But the Laboratories of the State Board of Health did it for several years, for two reasons: 1. That they had time to do it without crowding other work out, and it is always a pleasure to serve when possible; and 2, there was no other place in the State where such work could be done.

But now it will have to be cut out for the reversion of the same two reasons. The laboratories *do not have time* to do it without neglecting other strictly public health work, and furthermore, it *can be done* elsewhere in the State. There is a private laboratory in Jacksonville equipped for this work.

This morning a case of smallpox was reported in the jail. That has occurred before and in many parts of the State. But it should occasion no surprise. Smallpox has lately occurred in many places—in a post office, a department store, a grocery store, a market, a delivery wagon, the Express Co., an apartment house, a hotel, a hospital. It has occurred in the city, in the country, in the village. It has occurred among the whites and among the blacks. It has occurred among the "eight-rocks," the "chocolates" and the "high yellows." It has occurred among men and old men, and women and children and infants. It has occurred among everybody but the vaccinated. They have escaped.

THE MOST UNKINDEST CUT OF ALL.—To see a decent self-respecting man, who believes that soap will protect him from smallpox, and depends upon it to the exclusion of everything else, using it in season and out of season; neglecting to get vaccinated and keeping his body scrupulously clean as though his very existence depended upon it; not even putting a little bag of assafoedita round his neck; but preaching cleanliness and practicing cleanliness day in and day out—to see such a man get smallpox and then class him among the great "unwashed," that is indeed unkindness.

The State Board of Health examines embalmers. It has been accused of being rigid in the examination. This we challenge. The examination is not rigid. In proof whereof several passed. A boy of 22 passed. He has never attended a college of embalming. His preliminary education is very limited. But he has studied the subject reasonably well, and he made practically a perfect mark. Several others made good marks. But some—just let me show you why some failed:

Q. Describe the aorta.

Ans. It is the largest arical of the body.

Q. Have you ever seen any bacteria?

Ans. Have seen them through a EX Ray.

Q. Describe the circle of Willis. (A circle of arteries at the base of the brain).

Ans. The braine is supplied with blood by the R. & L. Arical.

Do you wonder that some didn't pass?

After going through the wards at the Anti-vaccination Hospital and asking each patient if he had been vaccinated and getting negative replies from all, he said (speaking to one of the the patients): "It is a pity you didn't get vaccinated." The old negro said, "Yes, boss, yes, sah; but all my people'll get vaccinated a'ter dis. All my chil'un, and my chi'un's chil'un, to de third and fourth generation, sah; yes, sah, to de third and fourth generation, sah. Dey'll all get vaccinated, sah."

"Experience teaches a dear school, but —— will learn at no other."

The State Board of Health of Maine has issued a sixteen-page pamphlet on "The Diagnosis of Smallpox." So it would seem that they have their troubles up there.

"Just as you and I."

FLORIDA

Health Notes

IN GOD WE TRUST

OFFICIAL BULLETIN

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EDITED BY
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HIRAM BYRD, M. D., Assistant State Health Officer.

EXECUTIVE OFFICE AND CENTRAL LABORATORY:
State Board of Health Building,
Springfield Boulevard,
Jacksonville.

BRANCH LABORATORIES:
State Board of Health Building
Florida Avenue and Constant Street, Tampa.
City Hall, Pensacola.

Sent to any address in the State for the asking.

If you receive it without asking, it means that someone else has requested it for you.

When you change your address drop us a card.

When giving change of address, give both the old and the new.

Anything you want to know about the public health we will try to tell you.

Any information you want about communicable diseases of domestic animals we will help you to get.

Address communications to Jacksonville, Fla.

'Tis a wise community which places community health above all other community possessions. —Chicago Health Bulletin.

The Record Co. 49100 St. Augustine, Fla.

HOSPITAL FOR THE INDIGENT CRIPPLED CHILDREN

The Legislature of 1911 passed an enactment—which was a pet measure of the Governor—called the "Crippled Children's Bill," a copy of which is here given. The State Health Officer did not take action in enforcing this measure because of the ambiguity of language and because he really did not know just where he could in the State make provision for caring for these unfortunates of the State, and which the enactment stated must be indigent. Quite recently—during the session of the annual meeting of the Board—a way opened up that gives the State Health Officer an opportunity to extend the provisions of the law to all indigent crippled children in the State. They can be cared for at St. Luke's Hospital and at the Brewster Hospital in Jacksonville, and the State will pay for hospital charges for those who are indigent and come within the scope of the State's aid in this respect. Application blanks for admission to these hospitals can be had from the State Health Officer. We learn that something similar to this is now being done in a limited way through the philanthropic generosity of one of Jacksonville's prominent families; and the surgeon who is carrying out the wishes of the family through "a fund" which they have provided, has signified to the State Health Officer his willingness to assist in this humanitarian work for the little crippled children of the State, whose parents have not the financial means for necessary relief. The State Health Officer has asked the *Times-Union,* and through the *Times-Union* asks the other State papers, to make this statutory enactment public that those who wish to avail themselves of its stipulations may be informed.

CHAPTER 6133 (No. 14).

An Act to Authorize and Direct the State Board of Health to Establish a Hospital for the Treatment of Indigent Crippled Children, and Providing an Appropriation Therefor.

Be It Enacted by the Legislature of the State of Florida:

SECTION 1. That the State Board of Health be, and it is hereby authorized and directed to establish at some suitable and convenient location in this State a hospital for the treatment of indigent crippled children of this State. In such hospital indigent crippled children of this State shall be received and treated free of charge.

SEC. 2. That for the purposes of Section 1 hereof the State Board of Health is hereby authorized to purchase a plot of ground and erect thereon a building suitable for such purpose, or to purchase a plot of ground with building already erected, in its discretion. For such purchase, and for the purchase of suitable instruments, apparatus, furniture, fixtures and other articles necessary for such

an institution, the sum of twenty thousand dollars, or so much thereof as may be found necessary, is hereby appropriated, payable from the State Board of Health Fund.

SEC. 3. That for the purpose of maintaining the hospital herein provided for, and of employing such physicians and attendants as are requisite for the conduct of the hospital, the sum of ten thousand dollars, or so much thereof as may be necessary, is hereby appropriated annually for the two years beginning July 1st, 1911, payable from the State Board of Health Fund.

SEC. 4. This Act shall take effect July 1, 1911.

Approved May 30, 1911.

PLAGUE IN PORTO RICO

If you will go back and read the Annual Reports of the State Board of Health for the last two or three years, you will see where the public of Florida have been repeatedly warned that we are in more or less danger from plague. This warning has not been taken seriously by all. But if the time comes when that dread disease effects a landing in our own State, it will be a serious situation.

The office is this minute (June 20) in receipt of a telegram from the Surgeon-General of the Marine Hospital Service that plague is in Porto Rico. That is some thousands of miles nearer than it was when we seriously sounded the warning, some thousands of miles nearer than it has ever been to Florida, and what is more, is upon American soil.

There is only one way to control plague. That is rat extermination. They have found it so in California, in Oregon, in South America, in the far East. It is as impossible to control plague without rat destruction as it is to control smallpox without vaccination.

What then? The most important thing is to make a crusade against rats. It will pay us in dollars and cents.

In the absence of that, the next best thing is to know how plague is transmitted, so that we will know what to do whenever we have to face the problem. Do you know? And does your neighbor know?

BEN HUR AND LEPROSY

Every one has some sort of notion of leprosy. These notions have usually been acquired in two ways—by meeting it face to face, and from literature and hearsay. The two are very different.

Moses was an excellent sanitary officer, but his diagnosis of leprosy, judged by the disease as we see it today, was very faulty. He

included a number of things not leprosy, and most certainly would pass a number of real lepers.

But it is not Moses so much that gave the wide-spread misconception to the disease, as Lew Wallace. *Ben Hur* is a thrilling story, but a poor text book on leprosy. It gives a fine description of a chariot race (so far as we know), but he needed something supernatural in the way of disease to develop his plot, and very wisely, from the story-teller's standpoint, chose something in which the public would not detect the imposition.

LEPROSY IN THE UNITED STATES

(From Public Health Reports, U. S. Pub. Health and Mar.-Hosp. Serv., Washington, June 14, 1912.)

In order to ascertain the number of lepers in the United States in so far as the cases were a matter of record, a letter was written to the health authorities of each of the several States, Hawaii, Porto Rico, and the Philippine Islands asking for a statement of the number of new cases reported during the calendar year 1911 and of the number present January 1, 1912. A tabular statement of the data thus obtained follows on page 101.

There was reported as being present January 1, 1912, a total of 146 cases in the continental United States. Of these, 40 were new cases coming first under official recognition during the year 1911. This number, however, necessarily represents only a part of those present, as in many States the disease is not notifiable and in others the requirement of notification is for various reasons difficult of enforcement.

Leprosy has been specifically made a notifiable disease in the following 18 States and the District of Columbia: Alabama, California, Connecticut, District of Columbia, Florida, Idaho, Illinois, Indiana, Iowa, Massachusetts, Nebraska, New Jersey, New York, Oregon, Pennsylvania, South Carolina, Utah, Washington, Wisconsin. It is also notifiable in Hawaii, Porto Rico, and the Philippine Islands.

In Michigan a regulation of the State Board of Health specifies that cases of leprosy shall be reported for statistical purposes. In certain other States the law requires that cases of all infectious or contagious diseases shall be reported, and among these leprosy would naturally in most cases be included. However, in the absence of a statement of the diseases that shall be construed to be infectious or contagious, it would appear to be left to the personal opinion of each practicing physician as to which diseases came properly under such a classification, and were, therefore, notifiable. Under these conditions the reports are likely to be incomplete.

In 1901 a commission composed of officers of the Marine-Hospital Service made a careful study of the prevalence of leprosy in the United States. They attempted to locate all cases possible, and to do this carried on an extensive correspondence with State and local health authorities and practicing physicians, and in addition a member of the commission visited certain localities to verify

the accuracy of reports. A total of 278 cases was found at that time, although the commission believed that the number present was greater and that there were undoubtedly cases which they had been unable to locate.

Of the 278 cases reported by the commission, 145 were born in the United States, 120 in foreign countries, and the place of birth of 13 was unknown. Of the total number, 186 were reported as having probably contracted the disease in the United States. Of the 278 cases, only 72 were isolated and provided for by States or cities in which they were domiciled.

Although the number of cases of leprosy reported by the State authorities as present January 1, 1912, was only 146, whereas the commission above referred to found 278 in 1901, it can not properly be inferred that there is a lessened prevalence of the disease. The 146 cases reported as present the first of this year are, with one or two exceptions, isolated and under the control of State or local authorities. These 146 cases are therefore probably comparable with the 72 reported in 1901 as isolated and provided for by State or cities.

During the year 1911 cases of leprosy were diagnosed in 18 States, and January 1, 1912, cases were officially known to be present in 17 States. Three States, namely California, Louisiana, and Massachusetts, have leprosaria where lepers are isolated and cared for. In the other States cases of leprosy are provided for in various ways and with varying degrees of isolation.

In Porto Rico there were 28 known lepers January 1, 1912. In Hawaii and the Philippines the disease is present to such an extent that its control constitutes one of the important functions of the health authorities.

LEPROSY IN THE UNITED STATES AND INSULAR POSSESSIONS

Cases Reported During the Calendar Year 1911 and Cases Present Jan. 1, 1912.

STATES.	New cases reported during calendar year 1911.	Cases present Jan. 1, 1912.	Remarks.
Alabama	0	0	
Arizona	0	1	Case isolated at Globe 2 or 3 years.
Arkansas	.....	.....	No report.
California	12	23	
Colorado	0	0	
Connecticut	1	1	
Delaware	0	0	
District of Columbia	1	0	
Florida	2	2	
Georgia	0	0	
Idaho	1	0	Case left State.
Illinois	0	0	

Leprosy in the United States and Insular Possessions—Continued

	New cases reported during calendar year 1911.	Cases present Jan. 1, 1912.	Remarks.
STATES.			
Indiana	1	1	Patient died Mar. 3, 1912.
Iowa	0	0	
Kansas	2	1	1 case Mexican laborer; other resident Ellis Co.
Kentucky	0	0	
Louisiana	(?)	71	
Maine	0	0	
Maryland	0	0	
Massachusetts	2	13	Of 13 cases mentioned, 9 are men and 4 women.
Michigan	1	1	
Minnesota	3	18	
Mississippi	0	0	
Missouri	.....	.....	No report.
Montana	0	0	
Nebraska	0	0	
Nevada	0	0	
New Hampshire	0	0	
New Jersey	0	0	
New Mexico	0	0	
New York	5	0	These cases were reported in New York City.
North Carolina	0	0	
North Dakota	1	1	
Ohio	0	0	
Oklahoma	0	0	
Oregon	0	0	
Pennsylvania	3	3	
Rhode Island	2	1	
South Carolina	0	0	
South Dakota	0	0	
Tennessee	0	0	
Texas	0	0	
Utah	1	1	
Vermont	0	0	
Virginia	0	0	
Washington	1	2	
West Virginia	0	0	
Wisconsin	1	1	Norwegian woman; origin unknown.
Wyoming	0	0	
Total	40	146	
HAWAII AND THE INSULAR POSSESSIONS.			
Hawaii	65	696	
Philippine Islands	1,142	2,754	
Porto Rico	10	28	1 case died Jan. 16, 1912.
Total	1,217	3,478	

CONNECTICUT.

Dr. Joseph H. Townsend, secretary of the State Board of Health, reports February 13, 1912, as follows regarding the case occurring in Connecticut: The one case reported during the calendar year 1911 is, so far as I know, the only case that has ever been reported in the State. This case is in a man, a Lithuanian Jew, who has been in this country about 20 years. Fifteen years ago he had frostbites on both feet which did not heal readily, and for the past 10 years he has been an invalid confined to his home, his case having previously been diagnosed as syphilis.

DISTRICT OF COLUMBIA.

Dr. William C. Woodward, health officer of the District of Columbia, reported February 13, 1912, regarding the case occurring in the District as follows: The case reported January 24, 1911, was in a Filipino, age 20 years, who had been brought to the United States by a naval officer as a domestic. He was returned by the health department September 9, 1911, to the Philippine Islands, on board a transport.

INDIANA.

Dr. J. N. Hurty, State health commissioner, reported February 12, 1912, regarding the case of leprosy in Indiana as follows:

One case of leprosy was reported in Indianapolis December 27, 1911. The patient, female, colored, was born in Hawkins county, Tenn. After her thirteenth year she lived in Knoxville until 1908, when she removed to Indianapolis. She never had been farther south than Knoxville. She is the mother of six children, two are living, both grown to adult life. Previous to being attacked she had always been well. In November, 1910, she noticed some blotches on face, arms, and legs, and in March, 1911, consulted a physician, who diagnosed her trouble as lichen planus. Nodules first appeared on face, arms, and ears in October, 1911.[1] (The patient died in March, 1912.) One other case of leprosy was reported in this State about eight years ago. The case we now have we presume would be called sporadic, for we can not in the least degree trace the time and place of infection.

MICHIGAN.

T. B. McClintic, passed assistant surgeon, Public Health and Marine-Hospital Service, reported in June, 1910, regarding the case of leprosy noted in the table as present in Michigan as follows:

The case was located at Calumet, Mich. Name, M. J.; born in Alten, Norway, 38 years ago; father, two sisters, and two brothers all living and apparently in good health; one brother was recently killed in a railroad accident; his mother died of leprosy in Norway on May 13 of this year after an illness of approximately four years. M. J. came to this country from Norway on July 20, 1900, and settled in Calumet. Since his arrival in this country he has not returned to Norway, nor has he seen his mother. He worked in the copper mines in Calumet and while so engaged during the spring of 1904 the first symptoms of the disease made their appearance.

It first appeared in his nose, for the relief of which he had an operation performed. His nasal passages had become occluded and the operation temporarily relieved this. During the summer of the same year (1904) he went to

[1] See also Public Health Reports Jan. 26, 1912, p. 128.

Alaska under contract with the United States government to herd reindeer, and while there, during the following fall, the trouble with his nose returned and the disease began to manifest itself on his face and hands.

He stated that his face and hands felt as though they had been slightly sunburned.

At the expiration of his one year's contract with the government in Alaska he returned to Calumet and engaged in mining and carpentering. Since his return he has had exacerbations and remissions of the disease until now he presents a typical picture of a well-advanced case of tubercular leprosy. His hands, face, and feet are simply one mass of tubercles. Scrapings from these tubercles and from the nasal mucous membrane obtained showed microscopically enormous numbers of lepræ bacilli.

The patient and his family are to be isolated. No other cases were found.[2]

MINNESOTA.

Dr. H. M. Bracken, secretary State Board of Health, reports, February 14, 1912, as follows:

Two of the three cases reported to us last year were in persons American born. One, a woman, had a father and a brother die of leprosy in this country, the brother also American born. The other, a boy, had a leprous mother who died in this country.

Of the 18 cases of leprosy in this State now, 6 are in persons American born. Of these six 1 is a Canadian, the other 5 were born in Minnesota.

The source of origin in the Canadian case is not known, but the origin of all of the other 17 cases was in the immediate family of the leper.

We have no record of leprosy occurring outside of the family of a leper in Minnesota, and we know of many cases where, with a leper in the family, no other cases of leprosy appear. These have been cases where the lepers have been carefully isolated in their own homes.

PHILIPPINE ISLANDS.

Victor G. Hiser, passed assistant surgeon, Public Health and Marine-Hospital Service, and director of health of the Philippine Islands, reports March 23, 1912, as follows:

1. The number of cases of leprosy reported in the Philippines during the calendar year 1911 was 3,339. This includes 2,172 remaining at the Culion leper colony January 1, 1911, and 25 in the Moro Province, not taken to Culion.

2. The number of cases of leprosy present in the Philippines January 1, 1912, was 2,754.

3. The number of cases of leprosy reported from January 1 to March 23, 1912, was 135.

4. In round numbers, there have been collected in the Philippine Islands and transferred to the Culion leper colony 6,000 lepers. Of this number, in round numbers, 3,000 came from the island of Cebu. This island has a population of approximately 700,000, and as the total population of the Philippine Islands is approximately 7,000,000, it will be noted that although it has only one-tenth of the population of the entire islands, it has furnished approximately 50 per cent of the lepers up to date. On this island many instances have come to light which

[2]Two other cases have been reported in Michigan since Jan. 1, 1912.

indicate that leprosy is a so-called "house disease." The bureau of health is now collecting statistics, and already has a number of instances on hand in which cases of leprosy have developed year after year after the first leper was taken from a house.

UTAH.

Dr. T. B. Beatty, secretary of the State Board of Health, reported March 11, 1912, regarding the case of leprosy occurring in Utah as follows: The State Board of Health received a report of one case of leprosy during the year 1911. The case in question was reported from Uintah county, where the patient still resides. He is described as a man aged 25 years and a native of the Samoan Islands; has resided in Utah five years, and is a homesteader on land which was formerly a part of the Uintah Reservation. The local health officer is under instructions to enforce strict isolation, not permitting him to leave his farm.

The only additional case of leprosy that has been discovered in Utah in recent years was in the person of a native of Greece, who had the macular form of the disease, and was reported in 1910. This patient escaped from the authorities and returned to Greece after having been under observation for a short period.

TRANSPORTATION OF LEPERS IN INTERSTATE TRAFFIC.

AMENDMENT TO INTERSTATE QUARANTINE REGULATIONS.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, May 15, 1912.

To Medical Officers of the Public Health and Marine-Hospital Service, State and Local Health Authorities, and Others Concerned:

The following amendment is hereby made to the Interstate Quarantine Regulations promulgated by this department September 27, 1894, and amended August 17, 1905, and June 24, 1909, said amendment and regulations being in accordance with section 3, act of Congress, approved February 15, 1893.

Article 3, General Regulations, is hereby amended by the addition of the following paragraphs:

"Paragraph 9. Common carriers shall not, under authority of paragraph 8, accept for transportation nor transport in interstate traffic any person suffering from or afflicted with leprosy unless there has been obtained from the Surgeon General of the Public Health and Marine-Hospital Service or his accredited representative a permit stating that said person may be received under such restrictions as will prevent the spread of the disease, and said restrictions shall be specified in each instance: *Provided*, That, in addition to the above, permits shall also be obtained from the health authorities of the States, Territories, or districts to and from which the patient intends to travel.

"Paragraph 10. No person knowing or having reason to believe that he is a leper shall accept transportation nor engage in travel in interstate traffic unless permits have been obtained, as set forth in the preceding section, and unless said person shall have agreed in writing to comply with the restrictions as specified in the permits mentioned above.

"Paragraph 11. Any person who presents symptoms of leprosy and who is traveling or who has left the State where he resides, in violation of the above

regulations, shall be detained, and if proven to be a leper shall be returned to such State or removed to such Federal quarantine station as the Secretary of the Treasury may designate and the proper health authorities notified.

"Paragraph 12. Compartments or places in cars, vessels, or conveyances operated in interstate traffic and that have been occupied by persons afflicted with leprosy shall be immediately closed after being vacated by the patient and so kept until after proper disinfection."

J. F. CURTIS, *Acting Secretary.*

"BETWEEN HIS SATANIC MAJESTY AND THE MONSTERS OF THE MAIN"

SUSPECTED LEPER IS BACK AT HIS HOME.

(By Associated Press.)

Des Moines, Ia., May 23.—Herman Hirschfeldt, leper suspect, for several weeks isolated at Centerville, Ia., was secretly returned to his home in Bay City, Mich., last night, according to information received here today. The trip from Iowa was made in an automobile.

Although the Michigan State Board of Health and the Bay City authorities had refused Hirschfeldt, who was a member of the city council, admission to his home, Dr. Summer, secretary of the Iowa Board of Health, decided that he could not remain in Iowa.

This unceremonious treatment of a leper in Iowa and Michigan raises the question of how lepers are treated in other parts of the United States.

Remembering that the disease, *if contagious at all,* is far less so than tuberculosis—so slightly contagious that there is doubt about it being contagious, so slightly contagious that non-leprous children are borne by leprous parents—that in Honolulu they have two schools for non-leprous children whose parents are lepers—so slightly contagious that in Molokai one woman has had five leper husbands and borne children by them and yet has never contracted the disease—so slightly contagious that in that large leper hospital in Havana, San Lazaro, over a hundred years old, and containing 175 cases in all stages of the disease, not one of the sisters of mercy has ever contracted the disease—I say, bearing this in mind, let us see how leprosy is treated in various parts of the United States.

In New York they are disregarded. They come and go at their own sweet will as though they had only a cold, or an unrecognized case of smallpox. In Louisiana they are cared for in a hospital. In Baltimore there are, as I understand it, two methods. One applies to a certain old case that has been in one of the Baltimore Hospitals for years, and nothing is said about it. The other is illustrated in the case

of one George Rossett, that the people of Baltimore will long remember. Rossett wanted to go to New York, and no one blames him for that, for there he would be a free man though a leper. Baltimore was ruining with willingness that he should go. So he started. He got to Philadelphia, and then he had to go through New Jersey. Now the people of New Jersey wouldn't stand for a leper passing through that State even in a box car. And while Pennsylvania was willing that he should pass through, they wanted to be sure he was good and through. They wouldn't stand for any balking. So when the scheme was balked, Rossett was shuttle-cocked back to Baltimore —double-quick.

When Rossett left Baltimore for New York, the people drew a long deep breath, and congratulated themselves on the miraculous escape they had just had from all turning to lepers. And while they were jubilating, Rossett was landed back among them. Now that was the cue for fit number two. Just at that time a bright thought struck Baltimore, and no time was lost in putting it into action. Rossett was quietly spirited over into West Virginia and landed at Parkersburg.

That was a bright thought, indeed. It was equal to her hookworm campaign, a little later on, when she just placidly published to the world that while Virginia had hookworms—plenty of them—in the Northern Neck, that she, Maryland, just across the river, was free from them. And that ended it.

But back to Rossett, and Parkersburg. When the people of that little city awoke to the fact of a leper in their midst, they, too, threw a fit. But they had no sooner recovered consciousness than they saw that that was no time for fits—there was a leper among them. What they did to him besides guard him at a safe distance, and leave some food where he could get it, no one knows. Some said he died of his disease.

We have seen from this how leprosy is treated in New York, New Jersey, Pennsylvania, West Virginia, Louisiana, and, from the above clipping, Michigan and Iowa.

* * *

There is a leper boy in Jacksonville. He was born here. Where he got leprosy is a matter of conjecture. The boy has had quite a checkered career. Left an orphan at an early age, the Children's Home Society took him in tow and placed him in first one home and then another, first one school and then another till finally he was sent up to Charleston, S. C., to school. After being up there a few months a diagnose of leprosy was made. Now, they had at the time a few cases of leprosy in Charleston. So they didn't get panicky about this boy as

they are wont to do in some other places. But they quietly put him on a Clyde Line vessel, and placed an attendant with him, and delivered him up to the Children's Home Society in Jacksonville.

Now Jacksonville didn't throw a fit, although this is the first and only case of leprosy here in its history.

Preparations were immediately made to take care of the boy. The County Commissioners, upon whom the responsibility rested at that time had no place for him. The State Board of Health accordingly took him to the Isolation Hospital.

That was four years ago. The Board had no authority under the law to take care of the boy, so the Attorney-General of the State advised at the time, but by the rule of "do it," it took care of him. And the following legislature conferred the needed authority.

Now the boy has been there ever since. Except that he has run away from time to time. Sometimes he came back when he got hungry and sometimes he came when he was sent. He was gone several months once. Went off with the races. Says he went to Kentucky. Then at another time he went to Tallahassee, and where all he has been we have no way of finding out. A pretty good traveler he seems to be. And though a leper, so far as we know he has never caused a panic. He got in the police court once for vagrancy, but the papers stated he was dismissed "on his face."

The boy is in good health. Though of a rather low order of intellect he has lately developed some interest in birds. He has been observing a Chuck-will's-widow's nest since it was first started. He also kept tab on an indigo-bunting's nest and is able to state several things about these birds that he has learned at first hand. Whether his interest can be sustained remains to be seen.

He is very happy out there when there are smallpox patients for him to talk with. He has been vaccinated and of course is safe against smallpox. He has a cottage to himself, and enjoys life perhaps as much as the average person.*

The following is an editorial from the *Saturday Evening Post* of May 18th and is so in keeping with the teachings and doctrines of the State Board of Health of Florida that THE NOTES reproduces it for the information of those who have an exaggerated idea of the contagiousness of leprosy, with the hope that common sense and good reason may take the place of foolish and unfounded fear:

FALSE ALARMS.

We might doubt the press reports that a thriving little mid-Western city was panic-stricken upon discovering that it contained a leper, if we did not remember

*LATER.—The boy is loose and gone again.

the recent and exceedingly scandalous case of another leper, who was hustled from place to place as though he were a dynamite bomb on the point of exploding.

Every literate person ought to know that leprosy in a civilized country is one of the least dangerous of diseases. Probably a leper could walk down Broadway at midday with less danger to public health than occurs every time a consumptive spits in a street car. Our total danger from leprosy is to that from tuberculosis about as one to a trillion. Indeed, in those countries of low civilization where the disease persists, lepers are by no means the worst off among the population. Frequently they live in perfect comfort to a ripe age. Leprosy may have been dangerous when the treatment of it consisted in howling "unclean" and in hurling rocks. When men ceased stoning lepers and began studying them the danger disappeared.

Of course leprosy is un-American, while tuberculosis is not. We have panics over the one and considerable stolidity over the other. The temptation to draw analogies is obvious. Anarchy in the United States, for example, is one of the least dangerous of mental dissipations. One little thing like the administrative emasculation of the pure-food law does more harm in a few years than anarchy is likely to do in a century. The one is un-American; the other is not. We have a fit over the one and accept the other with considerable complacency.

LOST

Lost, strayed, or stolen one leper, who answers to the name of Vernon Bickford, barring aliases; white, but somewhat pigmented from his disease; age about sixteen, although before the police court of Jacksonville recently he was taken for an old man and dismissed on "his face." Finder will please return to the State Board of Health and receive our thanks, the exchequer of the poor. Do not be afraid of him. His disease, if contagious at all, is very mildly so, and otherwise he is harmless.

THE NEXT BEST THING

While the State Board of Health *knows* the value of vaccination in the prevention of smallpox, it also knows that there are many people who prefer to take their chances with the disease. These remarks are addressed to that class. Not to the vaccinated, for they need no further protection than they already have. Not to those who do not oppose vaccination, but who delay merely waiting for a more opportune time. But this is addressed to those who actually oppose it.

The Board will give you the best protection that it can under the circumstances. It will prevent your getting the disease as far as possible. If you get it, then the Board will take care of you the best it can. If you are indigent it will provide a place for you to stay—a hospital if you are in reach of one, and if not it may be able to get

some little house that is unoccupied, and provide for you there. Yes, the neighbors will kick about your being there and do all sorts of foolish things that people do when they are scared, but the Board will endeavor to pacify them and take care of you at the same time. The Board will be the best friend you have—in fact, it will be the only friend you have when you get smallpox. It will give you medical attention *if you want it to,* but it will not thrust it upon you.

All this *if* and *when* you get smallpox.

But you may never have it. We hope you won't. You may go through life unvaccinated and still escape smallpox. Many people do. But still there is risk. This is a risk which you can't escape. But fortunately you can reduce this risk to a minimum. You can reduce this risk to where you will be almost as safe as if you were vaccinated. Can be almost safe and still be unvaccinated.

It is a trick I have seen resorted to many times in the last ten years. It has never seemed to me playing quite fair, but still there is something to be said on both sides of it.

A certain man in the western part of the State, a turpentine operator, who employed a large number of hands, was the first I ever saw to resort to this method of self-protection. When smallpox got into his camp, where he had some three hundred hands, he realized at once the imminence of his danger, for himself and family, none of whom had been vaccinated. He at once ordered every man on his works to get vaccinated or leave. He quietly excepted himself and family in this edict. "For," said he, "when everybody here is vaccinated but us, we will be as safe against smallpox, as if we were the only persons here." Which was true. He realized that his own safety was directly proportionate to the thoroughness with which the population of the camp was vaccinated. He wouldn't get vaccinated himself, but he enjoyed the protection that the vaccination of others gave him.

In defense of his action, too, he said that he was doing the others a real kindness. That he knew that vaccination would prevent smallpox and that it was the lesser of two evils. (On this point I perfectly agreed with him.) And that since he had done them a kindness in protecting them from smallpox, the least that they could do in turn was to protect him. That he had protected them in the only way possible, and that since they were protected, there were two ways for him—complete protection by vaccination, or almost complete protection by having the others vaccinated, and that he had the right to make his own choice. He claimed the right all the stronger since if he should take smallpox he would not endanger them, seeing they were already vaccinated.

He was a very pleasant man to deal with, practical in the extreme, a successful business man, and one with the clearest manner of expressing his views it has ever been my good fortune to meet. This rare power of expression came to the front when it was proposed to begin by vaccinating him and his family first. "No," he said, "I am not going to be vaccinated, neither me nor my family, but I am going to do the next best thing; I am going to have everybody else on the works vaccinated."

TICKS

Did you know that the ticks on the cows are responsible for Texas fever? Well, they are.

A DEAD PIG

In the good old days on the farm, when the world seemed newer than it does now, and when people lived further apart and yet nearer together, it sometimes happened that an animal died. It made no difference whose animal it was, when dead it belonged to no one, and yet it was easily disposed of. If a large one, and too much for one man, two took it in charge. One would say to another: "Let's go and bury this animal," and they went. If a third happened along he joined the other two. A few minutes labor and the ceremony was over. Nobody was out anything but the little time required for digging the grave and filling it up. Perhaps thirty minutes, when ten hours were worth a dollar and a half.

That custom still prevails among the plain country folk. No one would think of writing the State Board of Health two hundred miles away that "an animal is dead near my house," and "please have somebody dispose of it." They would laugh at the very thought of driving six miles to town and spend a half day to see the chairman of the board of county commissioners to get him to have some one bury a dead pig in the vicinity. And least of all would these plain country people subject themselves to the smell while they quarreled over whose duty it was to move it, or blamed the legislature, or the county commissioners, while they held their noses at the feast of buzzards.

In the city of course the street cleaning department looks after such things, and no one thinks of doing it himself. He calls the scavenger cart and that is the last of it.

Neither in the country nor in the city is there any trouble about a carcass. But a little zone just around the city, where people are too

proud for country ways, and too poor for city ways, there the buzzards feast. These poor proud denizens of this unkempt zone will try every office from governor to dog catcher, but they would hold their noses till doomsday before they would touch it themselves. They will argue that it will make them sick, but what is sickness, compared to such menial labor! They would die, if need be, and think perhaps they had died the death of martyrs; they would die and be themselves wafted away in similar odors, but they would never touch that pig.

USELESS EXAMINATIONS

The State Board of Health has frequently been called upon to make examinations that involved a great deal of work but which had no practical value. For instance a certain dairyman living over three hundred miles from Jacksonville took a suit case full of bottled milk and brought it to Jacksonville to see if it was causing typhoid fever among his clientele. A certain State official of high rank gathered up some dust of the street and sent it for examination to see if it was causing the prevailing cough. It is common for people to send a bottle of milk to have it examined to see if there is anything the matter with the cow. A man sent a bottle of water to have it examined for germs. Another sent a bottle of water that had been boiled, for examination. One sent a specimen of blood to see if the patient had pellagra.

When such a specimen or request comes, it is always a question how to handle it. Not to examine it at all will probably cause the Board to be charged with refusing to make examinations. To attempt to explain that it can't be done will probably lead to the charge of inefficiency. To make a report that throws no light on a matter would be to cater to the delusion and encourage it for future reference. It is one of the difficulties of applying a highly technical skill to the affairs of those that do not understand the principles upon which it is based.

The Board is always pleased to make examinations that will help to clear up a difficulty, but when in doubt, it is best to first *ask the Board what it can do about such and such a case,* and then submit specimen if so advised.

Full instructions about *how* and *when* to send specimens for examination can be had for the asking.

* * * With a choice of a wealth of modern text books, with a selection of good medical journals, with opportunities for post-graduate study and attendance

upon medical and surgical clinics, and above all, the opportunity to utilize the excellent laboratory and diagnostic facilities afforded by our efficient State Board of Health, any man may know the early picture of disease and may make an early and correct diagnosis in a great majority of cases. The profession should be brought to a full realization and the laity should be taught that the medical man who studies his case, who makes a clean-cut diagnosis, who determines the necessity for an operation and assumes the responsibility of advising operative measures is deserving of and should be given adequate compensation. * * *—
Extract from Annual Oration, by Dr. Raymond C. Turck, before the Florida Medical Association, 39th (1912) annual meeting, subject: Advances in Surgery.

The New York Department of Health has established the principle that "A health administration legitimately includes under its influences every disease which is preventable and every evil which is detrimental to health and welfare. It is not only concerned with the control of contagious and communicable diseases, but of any disease in which public or private sanitary measures, education in hygiene, the use of specific curative measures, or remedies, or any other generally applicable means of prevention may be invoked for the betterment of the public health."

We are apt to look to New York for the standard. In this matter of public health we do well to look to her for a definition of the duties of a health department.

BRILL'S DISEASE

It now pans out that the so-called Brill's disease, which is endemic in New York City, is nothing but an attenuated form of typhus fever. Drs. Anderson and Goldberger of the Marine Hospital Service have brought forth the proof, which Brill himself considers conclusive.

And typhus fever is louse-borne.

BOVINE TUBERCULOSIS

Dr. G. Simms Woodhead is of the opinion that as we go more and more deeply into the subject of bovine tuberculosis, that we will attribute more and more of our tuberculosis among human beings to tuberculosis of the cow.

Dr. Woodhead is a man than whom there is none better informed on this subject.

NOTICE!

To Those Who Haven't Caught On:

Smallpox patients are not to be guarded at the expense of the State Board of Health. They are to be legally quarantined, and if they violate it, legally prosecuted, by the prosecuting attorney of the county in which it occurs. This is the law as it stands on the statute books, and as it is being administered by the State Board of Health.

Mosquitoes are like guns—no great harm in them unless they are loaded. But it is well to assume that all guns are loaded.

We neither advocate compulsory vaccination, nor compulsory baptism. Let each look into the matter for himself and take the consequences of his own decision.

RURAL SANITATION

By W. C. Rucker, M. S., M. D.,

Assistant Surgeon General, United States Public Health and Marine Hospital Service.

The happy days of childhood
I often call to mind,
I love to live them o'er again
By memory's light refined—
The orchard and the meadow,
And the loft of fragrant hay,
The garden and the privy,
And the well not far away.

The farm yard with its litter
Of manure round about,
The milking shed where flies galore
Flew buzzing in and out;
The pig-sty and the chicken house,
The hens that scratched all day
In the ground beneath the privy,
With the well not far away.

We took our joys and sorrows
As they chanced to come along,
My brother had the ground-itch
And he didn't grow up strong,
And Mary died of fever—
It was mighty sad that day—

But we didn't blame the privy
Nor the well not far away.

In the summer time mosquitoes
Used to sing the whole long night,
But we would keep the windows closed
And thus avoid the bite,
But Billy got the ague
And Lizzie pined away—
Mosquitoes—foul air—privy,
And the well not far away.

We used to think that death was just
A punishment for sin—
The sin of ignorance I say!
So let us now begin
To try and get the windows screened,
But open night and day,
And a sanitary privy
With the well quite far away.

Let's clean the cows at milking time,
Let's clean the barn yard too,
Let's rid ourselves of fevers
And the chills and ague crew,
Let in the air and sunshine
But drive the fly away,
With the ancient typhoid privy
With the well not far away.

A PLEA FOR THE WORD "MOCK"

When things are not what they seem, what more suitable word could be applied to them than "mock"? Prejudice need not be excited by the word, for "mock-turtle" soup, which everybody knows is not turtle soup, but a soup prepared from calf's head in imitation of turtle soup, is very popular. Modern times are full of mock things, but these things are described in a way which tries to convey, frequently with considerable success, that they are not "mock." In this connection there is much in favor of the word being adapted and adopted. It is plain, simple, and unmistakable, and freer from prejudice than are so many words. How much better, for example, would "mock-butter" be than "margarine" as a descriptive and discriminative term for that substance, and why should mock-butter be a more disparaging title than mock-turtle? As a matter of fact, mock preparations can be men-

tioned which are dietetically as good as the real preparation, if, indeed in many instances they are not better; but let there be no deception about the matter. Mock-turtle is probably more nourishing than real turtle soup, and the various margarines show no dietetic inferiority to butter. Flavor is, of course, of importance, but as a rule the price for flavor is out of all proportion to the intrinsic value of the food. If the word "mock" does not detract from the merits of mock-turtle why should its attachment discount the value or reputation of other articles of food or of drink or clothing. We have already suggested mock-butter for margarine and the idea can obviously be extended. Mock-brandy could, for example, be applied to brandy that is not a product of the grape or of a particular province; mock-sardine to a fish that is not, strictly speaking, a sardine; mock-champagne to a wine which, though perfectly wholesome and a genuine wine, is not a product of the celebrated Champagne district; mock-whisky to a spirit which is not an all-malt distillation; mock-port to a wine which is not produced in Portugal, though it may be a genuine wine and prepared in the same way; mock-flannel to a fabric which is not flannel (a much more straightforward name than flannelette). If the whole traffic of substitution is based on mimicry, and there can be no doubt of it, the adoption of the word "mock" forming a compound with the genuine word would give the public exactly the information wanted, and it is quite probable that the compound term would in time carry little or no prejudice with it. The question of definition, one of the most pressing questions of the day, would without doubt be considerably narrowed if it were decided to insist upon all substitutions being qualified by the word "mock."—*The Lancet.*

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Sent to any address in the State for the asking.

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When you change your address drop us a card.

When giving change of address, give both the old and the new.

Anything you want to know about the public health we will try to tell you.

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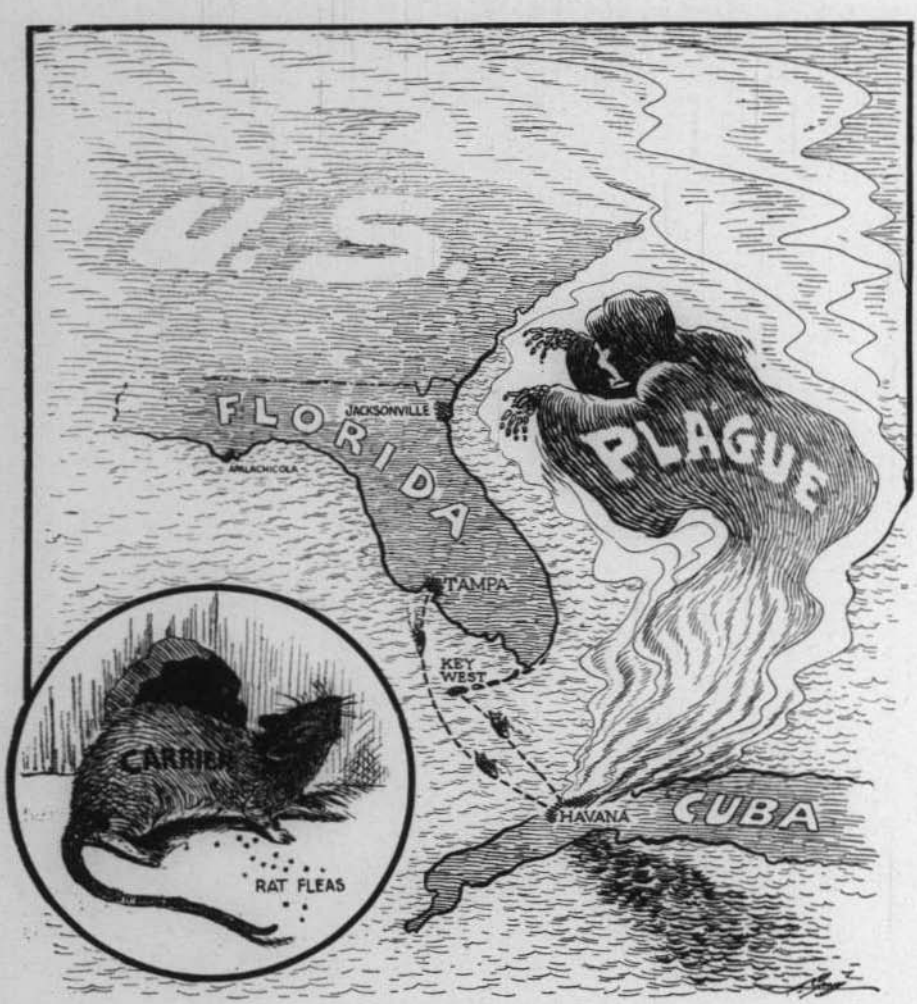
Address communications to Jacksonville, Fla.

A new era in the fight of man against the rat commenced with Zuschlag, of Copenhagen. By profession a civil engineer, by choice an ardent student of economic zoology, he was the first man to realize, in the pursuit of his studies the full extent of the danger threatening mankind from the presence of innumerable rats. He pointed out to his countrymen the awful waste of wealth caused by permitting the rats to destroy, unhindered, vast quantities of food and material; nor did he cease to impress upon the Danish people the fact that the rat is the principal agent in the dissemination of both plague and trichinosis.—*W. R. Boetler, in "The Rat Problem."*


U.S.
FLORIDA
JACKSONVILLE
APALACHICOLA
TAMPA
KEY WEST
HAVANA
CUBA
PLAGUE
CARRIER
RAT FLEAS

SPECIAL PLAGUE NUMBER

PLAGUE AND YELLOW FEVER COMPARED

The people of Florida, many of them at least, have a first-hand acquaintance with yellow fever, but not so much is known about plague. But now that plague is so close at hand it behooves us to get a little knowledge of that, also. Perhaps one of the best ways to get at this is to put the essential features of plague and yellow fever in parallel columns:

	PLAGUE.	YELLOW FEVER.
Specific cause:	A vegetable micro-organism. The bacillus pestis, as it is called, is well known, can be grown in artificial cultures, and plague in susceptible animals produced at will.	A filterable virus, possibly an animal organism. Not known except by the effect it produces.
Susceptible animals:	Chiefly rodents, as marmots, rats, ground squirrels. Guinea pigs and rabbits are susceptible to inoculation. Some of the monkeys and man are very susceptible. Horses, cows, sheep, goats, are only slightly susceptible. Geese, ducks, pigeons, etc., seem to be insusceptible.	Only man and the mosquito, the Stegomyia calopus.
Animals involved in the spread of plague:	Some rodent, as the marmot, rat, chipmunk, and the flea. Man being a susceptible animal, is incidentally drawn into it whenever he lives in close contact with plague infected rodents.	Man and the mosquito, the Stegomyia calopus.
Transmission:	There are three types of plague: (a) Bubonic, characterized by glandular swellings, and transmitted from rat to rat, from rat to man, and from man to man, by means of the flea. (b) Pneumonic, which is very much like pneumonia, and may be transmitted directly in the sputum and other excretions of the body—just as typhoid fever. (c) Septicemic, in which the patient is literally saturated with the plague bacilli, and is transmitted like the pneumonic.	There is only one type of the disease varying of course in severity, and only one method of transmission, namely: by means of the mosquito.

Mortality:	The bubonic type includes most cases, and the mortality varies from about fifteen per cent up to fifty or seventy-five per cent. There are not so many cases of the pneumonic—and septicemic types, but they all die without exception.	The mortality in yellow fever varies considerably but probably averages about ten per cent.
Duration in Man:	Bubonic Type—In fatal cases death supervenes in one or two weeks, in others the infected glands may break down and form chronic abscesses lasting several weeks or months. Pneumonic Type—Death supervenes in three or four days. Septicemic Type—Death supervenes in a few hours to one or two days.	Death usually comes in three to six days, or recovery in one to two weeks.
In rats:	The disease may become chronic lasting months or years and the animal seem to suffer no special inconvenience from being a plague sufferer—in other words a rat may become a chronic carrier of plague.	
In mosquitoes:		Once a mosquito becomes infected with yellow fever it is infected the rest of its life. One experimentally infected mosquito transmitted the disease on the 59th day of his infection.
In fleas:	When fleas bite infected animals and get the infection, they tend to clear themselves of the infection. A certain number of fleas were experimentally infected, and on the first day the plague bacillus was recovered from 38 per cent of them. By the 8th day the bacillus was recovered from only 8 per cent.	
Seasonal prevalence:	Worst among rats in winter, and among human beings in summer.	With us at least dies out whenever winter comes.
Reasons:	Rats seek their holes in winter and do not stir out much, consequently do not come in such close contact with man, and in connection with this, fleas are fewest in winter, and the rat fleas confined largely to the rat dens.	The mosquito that transmits yellow fever dies out in winter.

Seasonal eradication:	Winter will not eradicate plague—once it gets anchored in a community it remains there till either the human beings or rats are all but eradicated.	Winter in the United States at least eradicates yellow fever since it kills the mosquito that transmits it.
Introduction into country:	Plague is usually introduced into a country by means of infected rats—not by infected people nor infected fleas.	Yellow fever is usually or always introduced into a country by infected people—not by infected mosquitoes.
Quarantine:	Against plague should be directed strictly against rats, and to a less extent against human beings.	Against yellow fever should be directed strictly against infected human beings, and to a less extent against mosquitoes.

PLAGUE

Speaking of its geographical distribution, Manson says:

The first recognizable description of what is now understood by plague refers to its occurrence in Libya, Egypt, and Syria, about the end of the third and the beginning of the second century before the Christian era. The next authentic account, and the first as regards Europe, refers to the great epidemic known as the plague of Justinian, which in A. D. 542, starting from Egypt, spread to Europe and all over the Roman Empire, and which, lasting for fifty or sixty years, wrought the most frightful devastation wherever it reached, depopulating the towns and turning the country into a desert. From that time till 1841, when plague appeared for the last time in Constantinople, it recurred again and again in different parts of Europe, though latterly only in the southeastern part of the continent and in areas becoming gradually more circumscribed. In 1878-9 a small epidemic which speedily died out, broke out in the Russian province of Astrakahan. With the latter exception, and the limited epidemic at Oporto in 1899, and at Glasgow in 1901, and a few isolated and mostly imported cases at the large seaports, Europe has long enjoyed exception from this *worst of epidemic diseases.* The plague as a widespread epidemic visited England for the last time in 1864-79, when in 1864-5 upwards of 70,000 of the 460,000 inhabitants of the London of that day perished.

Egypt, in former times a favorite haunt of the disease, until 1899 had been exempt since 1844, although several epidemics have since the latter date occurred in its neighborhood—in Tripoli (Benghasi) in 1856, in 1859, and in 1874; and on the Red Sea coast of Arabia (Assir) from 1853 to the present time. It is now known to be endemic in Uganda and in the Hinterland of German East Africa.

Many epidemics have occurred in Mesopotamia (last in 1892), in Turkestan (last in 1892), in India, in China, and in Mongolia. In India there were several outbreaks during the nineteenth century, but with the exception of the current epidemic, they were of a localized rather than a general character. One, beginning in Cutch in 1815, spread to Scindo, and Gujerat, and continued till 1821. * * *

It is now known that plague has been endemic in southwest China in the province of Yunnan for many years. It is probable that the present extension

of plague had its origin in that part of China. * * * In 1894 it had extended to Canton, where it killed, it is estimated, 60,000 of 1,500,000(?). Later in the spring of the same year it broke out in the English colony of Hong Kong, subsequently spreading to Macao, Swatow, Amoy, Foochow, Formosa, and probably many other places in the southern provinces of the Chinese Empire, in one place after another, considering the wretched hygienic conditions. and the poverty of the inhabitants. It is safe to prophesy that plague will continue epidemic for many years to come. Japan and the Philippines were both infected from China.

Having probably been imported from Hong Kong it appeared in 1896 at Bombay, and subsequently as a great epidemic, spread to Calcutta, and to many other parts of India where it still prevails. Indian official returns give the total plague mortality from the current epidemic up to December, 1905, as 4,097,764.

Soon after its appearance in India, plague became extensively epidemic in Mauritius, where it still prevails at certain seasons. Madagascar, Delagoa, Cape Town, Port Elizabeth, in Cape Colony, and Durban; also Sydney and Brisbane in Australia, and Alexandria in Egypt, have all been visited.

Until its recent appearance in Brazil, the Argentine and other South American countries, in San Francisco, and Mexico (and quite recently in San Juan, and Havana), plague had never invaded the Western Hemisphere.

ÆTIOLOGY.

Plague is a specific disease. That means it is caused by a particular thing, and nothing else. You may have rats, you may have fleas, you may have unsanitary conditions—anything in the world but that particular thing and you will not have plague. And that particular thing is a tiny little plant. Not any kind of a tiny little plant, but just this kind and no other. It is called the bacillus pestis.

The bacillus pestis was discovered by one who is now the most famous physician of Japan—Kitasato.

When a person has plague these little plants, these germs, microbes or whatever you choose to call them, are found in millions in his body.

(It is necessary to digress here long enough to say that there are three types of plague, known as the *bubonic* in which the characteristic feature is the bubo, or abscess; the *pneumonic,* which resembles, as its name would indicate, pneumonia; and the *septicemic,* in which the patient is literally saturated with the germs.)

In the *bubonic type* these little plants or germs are found in the buboes, in the liver, spleen, kidneys, intestines, lungs, in great abundance, and in smaller numbers in the blood.

In the *pneumonic type* the germs are present in the sputum in enormous numbers. They are also present as may be expected in the urine and feces.

In the *septicemic type* of the disease the patient is literally saturated with the germs.

Now it is this little germ—these millions of little germs of this certain kind that cause all the trouble.

A little more about these germs. It has been seen that they are vegetables. That they are small—so very small that it takes a powerful microscope to see them.

Like other germs, they multiply rapidly. That is to say, they grow a little longer and then break in halves, and there are two where before there was only one. Under favorable conditions this may take place every half hour. If it took place every hour there would spring from a single germ, in 24 hours, some nineteen million organisms. In two days there would be some two hundred and eighty-seven billion. That would be about a pint, and weigh about a pound.

It is these germs multiplying in the body—the glands, the tissues, the blood, that makes the patient sick.

It is a very curious fact that some of these germs will make a person sicker than others of the same kind. They vary in virulence. Just as some strains of diphtheria germs will make a person sicker than other strains.

It is possible to grow the bacillus pestis in the laboratory. It is further possible to increase or decrease its virulence. Before the bacillus of plague was known it was noticed in Russia, Persia, and Calcutta, that certain outbreaks of plague were preceded by cases of people not very sick—maybe without fever at all. They merely had enlarged and painful glands. And then cases with more pronounced symptoms, more and more severe till finally it was found that there was an epidemic of plague on hand. That at first the death rate from it was low, but kept getting higher and higher with the progress of the epidemic. It was also noticed in certain epidemics that the very reverse condition held—that as the epidemic progressed the death rate instead of increasing decreased.

Recent observations in India have brought to light a very important fact, namely, that in some cases rats have plague and instead of dying, or getting well, develop chronic abscesses, which contain plague bacilli. Such rats may live for months or possibly years.

All these observations taken together made men think that the bacillus of plague varies in virulence—that is, may get milder, or may get more severe. And when the germ was found and men learned to grow it in the laboratory, they undertook to find out if this is true. It was found that a guinea-pig could be inoculated with plague and would die very promptly. Then some of the germs could be taken

from him and another inoculated and he, too, would die. This method is called passage through animals. It was found that after passing it through several guinea-pigs, it became more and more virulent. Just as the virus of hydrophobia becomes more virulent when passed through rabbits. Take the brain of a dog, for example, that has died of hydrophobia, and inoculate a rabbit with it and the rabbit will die in about fourteen days. Now from this rabbit's brain inoculate rabbit number two and he will die earlier. And when it has been passed through some fifty rabbits in that way it will kill one in six days. The virus has been exalted, as they say. And in the same way, passing the plague bacillus through guinea-pigs exalts it—increases its virulence.

Yersin found also that he could decrease its virulence. Instead of passing it through animals, he grew it in plates. Some colonies grew more rapidly than others. Selecting these and growing them, he found their virulence was diminished. By repeating it many times they finally ceased to be fatal to guinea-pigs, although they would kill white mice, since white mice are a little more susceptible to plague than guinea-pigs.

Such behavior of a germ is called mutability—changeableness. Some epidemics will give a very high mortality, others very low.

INOCULATION.

It has been seen that mice and guinea-pigs can be inoculated with plague. So can other susceptible animals and man. In 1835 two condemned criminals in Cairo were inoculated with plague and recovered. Whyte in 1802 inoculated himself with it and died. In a Vienna laboratory, in 1898, a fatal case of plague of the pneumonic type was contracted from working with the organism of plague. From the foregoing and from many other well known facts it has been distinctly proven that plague *is an inoculable disease. It can be inoculated from the blood of one person or animal into another, and can be grown in pure culture in the laboratory and inoculated into susceptible animals.*

FEEDING.

Plague can also be contracted by feeding. Rats or mice fed on cultures of plague bacilli, or on pieces of liver, or spleen of animals that have died of plague, contract the disease. Similarly Simpson has shown that pigs, calves, sheep, monkeys, when fed on plague material, contract the disease. And here comes in a curious thing. Manson says: "The disease thus induced is of an acute or of a chronic nature. When the latter, it may be ill-defined and not easily recognized.

Thus pigs may show no marked signs of illness until a month after feeding on infective material, and then only a few days or hours before death. Susceptibility to plague of the animals of the farmyard, and the chronicity and ill-defined nature of the disease which not infrequently occurs among these animals, as well as in rats, are likely to be important factors in continuing the disease in those endemic centers where people, cattle, pigs, and poultry, in addition to the ordinary domestic vermin, are housed under the same roof.

FLEAS TRANSMIT PLAGUE.

Yersin placed some plague infected mice in a cage, and with them some healthy mice. The infected mice died, and later the others also. Now this didn't prove that one mouse got it directly from another as was shown later by the Indian Plague Commission.

They found that they could place plague infected rats and healthy rats in the same cage *and by taking the precautions to keep them free of fleas, the healthy ones did not contract plague.* But every time fleas were introduced, either purposely or accidentally, the plague would spread from rat to rat. They found that young rats could even be suckled by plague infected mothers and still not contract the disease, *but to do so fleas must be rigorously excluded.*

They further found that they could take simply the fleas that had bitten plague infected rats and place them on healthy rats—far removed from plague—and the rats thus treated would succumb to plague.

They found that where rats had died of plague in a room, if other rats were brought in the room, they, too, contracted the disease. Then they found that by surrounding healthy rats with tanglefoot so that fleas could not get to them, they would not contract plague, even though kept in rooms where plague rats had died. It is therefore no longer an open question whether fleas transmit plague.

In order for fleas to transmit plague it is necessary for them to first bite an animal that has plague so as to get the plague bacilli—the plague germs. The rat flea, known as the Pulex cheopis, is the chief offender, and next to him the Pulex canis or dog flea. But both of these fleas also bite man.

When a rat gets plague his fleas stay on him till he dies, after which they leave him. They will not bite a dead rat. But when they leave him they are already infected and ready to transmit the germs to any other animal that they may bite. As long as rats are plentiful, the chances are greater for fleas deserting their dead host to reach other rats than

to reach human beings. Consequently when plague gets among rats, it is the rats that suffer most. But finally as the rats die out, the fleas take to human hosts, and then it is that plague spreads among human beings.

It has long been known that rats die in great numbers preceding plague. Writing about the mortality among rats during the Canton (China) epidemic, Rennie says that the Chinese regarded this occurrence as a sure indication of an extension of the epidemic. From districts of the city where plague had been raging for some time the rats entirely disappeared, whilst they kept on dying in other quarters to which the disease afterward spread. The rats would come out of their holes in broad daylight and tumble about in a dazed condition and die. One officer collected over 22,000 dead rats. It is said that the other day in Havana three rats ran into a barber shop in broad daylight and two of them dropped down and died. This was before plague was suspected there. The way they came to find plague was from an anonymous letter to the Health Department calling attention to the number of dead rats in a certain part of the city.

Manson says that age, sex and occupation have very little influence on the disease. Young children have it as well as adults, although it is less generally prevalent among the aged. Women, he says, are relatively more frequently attacked than men. He thinks it is because they stay indoors more, but if some one were bold enough to venture that fleas have a predilection for women, that would satisfactorily explain the greater prevalence of plague among the sex.

Atmospheric temperature seems to affect the prevalence of plague only as it affects the habits of the rats and fleas. In the winter there are fewer fleas than in the summer, and these are more closely confined to the burrows of the rats since they do not venture out except from necessity when the weather is cold. Consequently, as we would expect, rats suffer more from plague in winter, and human beings in summer.

The duration of an epidemic of plague varies largely according to the size of the place and the intelligent effort directed against it. Before it was understood how it was transmitted, an epidemic in a large city for example might last ten years while in a smaller place not nearly so long. Perhaps it is like smallpox—will not slacken its grip till practically every one becomes immune, either from having the disease or getting vaccinated.

SYMPTOMS.

Incubation Period.—The symptoms of plague begin to show themselves after an incubation period of two to eight days. In certain rare

instances it may be prolonged to fifteen days. In others it may be shortened to a few hours.

Prodromal Stage.—In a certain number of cases there is a stage called the prodromal stage—a stage between sick and well—in which the patient may feel chilliness, giddiness, mental depression, and sometimes dull pain in the groin, where the future bubo will be. But these cases are relatively rare.

Stage of Invasion.—What usually happens is that the stage of invasion is ushered in rather sharply—a sudden rise of fever, headache, aching of the limbs, drowsiness, or wakefulness with troubled dreams when the eyes are shut. There may be nausea and vomiting. In other words the symptoms are very much like the symptoms of any other acute infectious disease, for in their onset there is a general similarity among the acute infections.

Stage of Fever.—The stage of invasion may last for a day or two, without serious rise of temperature occurring. But generally it is of much shorter duration, or it may be altogether wanting. Indeed the disease may develop abruptly, without definite rigor or other warning. The temperature may rather suddenly rise to 103 or 104 or even to 107 degrees with a corresponding acceleration of pulse and respiration. The skin is dry and burning. The tongue is swollen and covered with a creamy fur, which rapidly dries and becomes almost black; sores form on the teeth and about the lips and nostrils. Thirst is intense, prostration extreme, the patient from utter weakness being hardly able to make himself heard when he tries to speak. Sometimes he becomes delirious, more generally he sinks into a typhoid state and perhaps picks the bed-clothes, or reaches for imaginary objects. The delirium is sometimes wildly furious, sometimes of the low muttering type. Coma, convulsions, sometimes like tetanus, retention of urine, are common manifestations. Some are constipated, others have diarrhoea. The spleen and liver are usually enlarged. The urine is scanty and contains a trace of albumin. The pulse, at first full and bounding, in the majority of cases, rapidly loses tone, becoming small, frequent, fluttering, dichrotic, and then intermittent. In many cases, as death approaches, the patient may become cyanotic.

Stage of Adenitis.—In two-thirds to nine-tenth of the cases, sometime between the first few hours and the fifth day, generally about the end of the first day, the characteristic bubo, or buboes develop. In about 70 per cent of the cases this is in the groin, more usually on the right side, affecting one or more femoral glands. In some 20 per

cent of the cases the bubo forms under the arms in the axillary glands. In some ten per cent of the cases it is the glands at the angle of the lower jaw that are affected. Very rarely they form in the popliteal space, or in the epitrochlear glands of the elbow.

Buboes.—Buboes vary considerably in size. In some instances they are not so large as a pecan nut—in others they are as large as a goose egg. Pain is often very severe; it is sometimes hardly complained of at all.

Gangrene.—In a very small proportion of cases there appears to form carbuncles, but Manson says it is small gangrenous patches.

Recovery.—In favorable cases, after the formation of the bubo, the fever begins to abate, and the symptoms generally to subside. The bubo, however, continues to enlarge and soften, after a few days breaking down and discharging pus. In rare instances suppuration is delayed for weeks, or even months. And in some instances the bubo subsides after a few weeks or months without ever breaking down. Convalescence sets in from the sixth to tenth day, or it may be delayed two or three weeks. Occasionally boils and abscesses follow the infection. The sores left by the buboes and abscesses are very slow to heal, sometimes taking weeks or months.

Hemorrhages are often very common in plague patients. Sometimes the gums bleed, sometimes blood is extravasated under the skin in small patches, later forming black and blue spots. There may be bleeding from the nose, bowels, kidneys.

Death may take place any time in the course of the disease. Usually it occurs between the third and fifth day, with symptoms of profound depression, or perhaps from convulsions, or coma, and internal hemorrhage, or later from exhaustion.

Septicemic Plague.—In this type the glands do not enlarge during life, although after death it is found that the glands throughout the body are generally somewhat enlarged. Large numbers of plague bacilli enter the blood, and the patient is prostrated from the outset. The temperature doesn't go high for the reason it would seem that the patient is not able to react even to that point. Great weakness, the extreme intoxication ends the patient's wretchedness within the first two or three days.

Pneumonic Plague is more or less like pneumonia, only that it is caused by the bacillus pestis instead of the pneumonococcus. Large numbers of bacilli are expectorated from the lungs. All cases are fatal.

Abortive Plague.—That is just a mild case—so mild as not to go to bed perhaps, or be very sick. Just as cases of smallpox may be so mild as not to stop the patient from work, as when a Pullman porter ran from Jacksonville to New York two weeks with smallpox without losing a day, and without any one ever suspecting he had the disease. Such mild cases occur in any disease with the possible exception of hydrophobia. So far as we know all cases of hydrophobia are fatal.

Relapses may and do occur in plague, though rare. They are dangerous, too.

Mortality in plague varies from very low to very high. In the mild epidemics it is practically nothing. On the other hand it may be as high as 95 per cent. In different epidemics it may range anywhere from one of these extremes to the other. Or in different times of the same epidemic.

Vaccination is possible in plague, as in typhoid fever. Haffkine prepared a vaccine by growing the plague bacillus in the laboratory and heating it to kill it, and injecting it into human beings to prevent plague; that is, to set up an immunity against the disease. It probably does not have the high protective value that typhoid fever vaccination does, and not nearly so high as smallpox vaccination, but nevertheless is sufficiently high that those exposed to plague do well to take advantage of it.

Now that plague is near the State Board of Health has a supply of Haffkine's vaccine for those who wish to go to Cuba or to Porto Rico, or to any other plague-infected place, as well as to be ready in case the disease should reach our own coast.

Treatment of plague does not amount to much except serum treatment. And that probably not a great deal. Ice bags and other palliative measures constitute the chief features of treatment.

CONTROL OF DISEASE IN THE TROPICS

Whatever influence the demonstration of the value of modern scientific medicine in the control of disease in the Panama Canal may have in this country, it is certainly having a good effect in tropical countries where the tendencies and ravages of tropical diseases are known. President Luco, of Chile, in a recent interview in a New York paper, after describing in glowing terms the effect of the opening of the

Panama canal on commercial and financial conditions in South America, said: "The spread of plague and preventable diseases has been one of the worst handicaps of tropical America. With sanitation such as that of Panama, there is no reason why South America should not maintain a vast population and support nations as advanced as any in the world. The Panama Canal opens the gateway to the western coast of the continent and the elimination of disease from the Isthmus renders an even greater service to all Central and South America. * * * We have decided that we would request Washington to lend us several sanitary experts from Panama, the men whose services have won for your country such undying fame at least in South America. I personally would like to have the services of one of Dr. Gorgas' experts." Colonel Gorgas prophesied some time ago that the control of tropical diseases, making tropical countries a safe place of residence for white men, opened up an almost inconceivable field for the civilization of the future. Civilized man now has the knowledge necessary to make him free from many contagious diseases. Those diseases about which exact knowledge is lacking are rapidly being investigated. When the history of the present era is written, the most important facts to be recorded will not be those connected with politics or international relations. The historian of the future will regard as the most important event of the present period the acquisition, beginning about 1870, by civilized man of the knowledge and control of preventable diseases. The extermination of plagues and epidemics will naturally be pressed most vigorously in tropical countries where the danger has been the greatest. It behooves us in temperate zones and civilized communities to bestir ourselves, lest those nations which we regard as backward outstrip us in the race for better health. That nation which first learns to utilize all the knowledge of modern science for the prevention of disease will rapidly improve, physically, commercially and financially, and will take a long step toward the front rank among nations.—*From Journal American Medical Association.*

THE PLAGUE SITUATION

The Boards of Health of the State of Louisiana and of the City of New Orleans have been co-operating in the trapping of rats along the New Orleans water front, and the laboratory examination of the rats thus caught. Surgeon J. H. White, of the Public Health and Ma-

rine Hospital Service, is in charge of this work. Up to July 27th several hundred rats had been collected and examined, and on this date Surgeon White reported that one plague-infected rat had been found at Stuyvesant Dock, No. 5, head of Pennison Street; that the location where the rat was found had not been connected with Porto Rican or Cuban shipping, and that, therefore, presumably the infection did not come from that source; that an extensive campaign had been planned for the destruction of rats and eradication of the focus discovered; and that that part of the city contiguous to the location where the infected rat was found, including 60 city blocks, will be surrounded, and all rodents therein will be killed, beginning on the city side and working toward the river.

In Porto Rico a case was reported as suspicious of plague on July 22 in Santurce. The diagnosis in this case was confirmed as plague on July 26. On July 23 a case was reported as suspicious in the Puerta de Tierra section of San Juan, and the diagnosis was confirmed July 24. On July 24, 25, 26, 27 and 28 no new cases were reported. On July 29 one case was reported at San Juan. This makes a total for all Porto Rico, up to and including July 29, of 45 cases, of which 30 cases occurred in San Juan; 10 in Santurce, a residential suburb of San Juan; 2 at Carolina, a town 13 miles from San Juan; 1 in Loiza, a short distance from Carolina; 1 at Dorado, a town 13 miles from San Juan; and 1 on a vessel at Arroyo on the southern coast of the island.

In Cuba no new cases were reported from July 23 to 28. The total number of cases in Havana, therefore, to July 29, remains as reported last week—3 cases.—*From Public Health Reports, Public Health and Marine Hospital Service.*

One of the important observations of Surgeon-General Blue is that houses may be rat-proofed by elevation. That is simply by building the house on pillars some eighteen inches above the ground so that cats and dogs can run under them. That is the custom in these parts.

Manson says that women have plague more than men. He thinks it is because women stay in the house more than men. Some think fleas have a special predilection for women; others that men are more

inured to suffer in silence. Certain it is that women have the greater fondness for rats.

Plague is a rat disease. The three things necessary to keep it going are: the plague bacillus, the rat, and the flea. Man gets it by being in bad company.

If plague were to get here, wouldn't the yowl of the cat on the fence at night sound good?

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A merry heart doeth good like a medicine.—Proverbs 22, 17.


THE ANNUAL LOSS OCCASIONED BY RATS AMOUNTS TO
73 MILLION DOLLARS IN GREAT BRITAIN
3 MILLION DOLLARS IN DENMARK
47 MILLION DOLLARS IN GERMANY
38 MILLION DOLLARS IN FRANCE
100 MILLION DOLLARS IN U.S.
SOUTHERN STATES
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NEW ORLEANS
SAVANNAH
GALVESTON

SPECIAL INSTRUCTIONS TO QUARANTINE OFFICERS REGARDING TREATMENT OF VESSELS ARRIVING FROM CERTAIN PORTS.

TREASURY DEPARTMENT,
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

WASHINGTON, D. C., August 9, 1912.

Medical Officers in Command, and Acting Assistant Surgeons in Charge, National Quarantine Stations.

SIR: This letter of instructions is intended to replace bureau letter of July 15, 1912, and its contained instructions are to be carried out in conjunction with the directions contained in department circular No. 37 of July 10, the provisions of which are to be made operative in the case of all of the ports hereinafter referred to.

Vessels from the following named ports are to be fumigated throughout for the destruction of rats upon their arrival at United States ports, and the masters of said vessels are to be directed in writing by you to have all lines or hawsers leading to shore protected by rat guards, when such vessels are lying at United States ports, all gang planks to be raised at night unless men be placed nearby to destroy escaping rats.

LIST OF PORTS FROM WHICH VESSELS MUST BE TREATED AS OUTLINED ABOVE.

1. Liverpool, England, and other English ports in which plague appears subsequent to the issuance of this order.
2. All ports in South America (including the river ports thereof).
3. All ports in the West Indies.
4. All ports in Africa (including the Azores, Canary Islands, Cape Verde Islands, and Madeira).
5. All ports in Asia (including those of the Straits Settlements, Japan, the Philippine Islands, and the Malay Archipelago).
6. All ports in Australia.

In the event any vessel from any port included in the above list arrives with a certificate from an accredited officer of the service, showing that the vessel has been fumigated for the destruction of rats at the foreign port of departure just prior to the sailing of the vessel, the quarantine officer may waive fumigation in his discretion if, as a result of a careful examination to this end, he is convinced that the fumigation has been effective.

Vessels carrying perishable cargoes, unless contra-indicated by

their general sanitary status, may be given provisional pratique and allowed to proceed to the wharf, there to remove said perishable cargo, prior to the process of fumigation, the vessel, however, to be protected during the removal of such perishable cargo by being breasted off from the wharf and by the use of rat guards and other precautions, such as the raising of gangplanks to prevent the escape of rats from the vessel.

Medical officers are directed, where practicable, to make regular inspections to determine whether the masters of vessels are properly carrying out the rat-funnel and other precautions to prevent the escape of rats from vessels. An effective compliance with these precautions should be enforced.

Certain cases are likely to arise in which vessels will arrive with cargoes such as iron ore, coal, or nitrates from isolated ports where, perhaps, the vessel has taken her cargo in midstream. Such ports, although geographically considered as falling within the scope of this order, may not be individually considered dangerous from the standpoint of furnishing plague-infected rats. On this account, upon the receipt of this letter, you will consult the statistics of the ports from which the vessels have departed before arriving at your station and make recommendations as to any ports which might, in your opinion, be considered exceptions to this general order.

You are directed to acknowledge this letter immediately upon its receipt.

Respectfully,

RUPERT BLUE,
Surgeon General.

AN ACT

To Change the Name of the Public Health and Marine Hospital Service to the Public Health Service, to Increase the Pay of Officers of Said Service, and for Other Purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

That the Public Health and Marine-Hospital Service of the United States shall hereafter be known and designated as the Public Health Service, and all laws pertaining to the Public Health and Marine-Hospital Service of the United States shall hereafter apply to the Public Health Service, and all regulations now in force, made in accordance with law for the Public Health and Marine-Hospital Service of the

United States shall apply to and remain in force as regulations of and for the Public Health Service until changed or rescinded. The Public Health Service may study and investigate the diseases of man and conditions influencing the propagation and spread thereof, including sanitation and sewage and the pollution either directly or indirectly of the navigable streams and lakes of the United States, and it may from time to time issue information in the form of publications for the use of the public.

SEC. 2. That beginning with the first day of October next after the passage of this act, the salaries of the commissioned medical officers of the Public Health Service shall be at the following rates per annum: Surgeon General, six thousand dollars; Assistant Surgeon General, four thousand dollars; senior surgeon, of which there shall be ten in number, on active duty, three thousand five hundred dollars; surgeon, three thousand dollars; passed assistant surgeon, two thousand four hundred dollars; assistant surgeon, two thousand dollars; and the said officers, excepting the Surgeon General, shall receive an additional compensation of ten per centum of the annual salary as above set forth for each five years' service, but not to exceed in all forty per centum: *Provided,* That the total salary, including the longevity increase, shall not exceed the following rates: Assistant Surgeon General, five thousand dollars; senior surgeon, four thousand five hundred dollars; surgeon, four thousand dollars: *Provided, further,* That there may be employed in the Public Health Service such help as may be provided for from time to time by Congress.

THE PLAGUE SITUATION.

PORTO RICO.

In Porto Rico one case of plague was reported in Puerta de Tierra, August 6. August 7 to 13, inclusive, no case occurred. This makes but one new case reported in all Porto Rico during the eight days, August 6 to 13, inclusive, and a total of forty-seven cases reported in Porto Rico to August 13. Of these thirty-two occurred in San Juan.

The control of the disease seems to be well in hand. The work of rat-proofing is being carried on as rapidly as possible. The work of catching rats is also being pushed, and the number of rodents being caught daily has been constantly increasing as the men in the rat-catching gangs become more familiar with their work. Men have been sent to Rio Piedras and to Carolina with traps, and a campaign will be

carried on against the rat in these places similar to that in operation in San Juan.

CUBA.

In Cuba the last case of plague was reported July 22. The patient, however, had taken ill on or about July 13. It will be seen, therefore, that over a month has elapsed since the onset of the last reported case. Many rats are being caught daily and examined. The total number amounts to several thousand. No plague infected rat, however, has been found in Habana.—*From Public Health Reports, Public Health and Marine Hospital Service.*

TO HOLD ANOTHER INTERNATIONAL CONGRESS ON PELLAGRA.

Another international congress on pellagra will be held in Columbia, S. C., on the 3d and 4th of October next. Physicians and sanitarians from all over the world are expected to come and bring their contributions of experience and talk. Those who have neither experience nor the gift of gab are invited just the same, for good listeners are as essential to the success of a meeting as talkers. And after all, the ability to listen well is a virtue of the highest order. It may require more skill to be a good speaker, but it certainly requires more patience to be a good hearer.

Whether any new theories will be propounded is uncertain. It is certain that all the ordinary theories as to the cause of pellagra have been exhausted. The theorists may content themselves with the embellishment of those creations already extant, or on the other hand some one may startle the world with a new thought, for the genus homo is very resourceful. I remember some years ago that an ingenious Frenchman (I think it was) advanced the theory that potatoes are not potatoes at all—that they are merely fungus growths on the roots of the plants.

But be that as it may, the old theories will in all probability receive attention. The corn-breadists, who delight to call themselves zeists, will strengthen and ornament the cornbread theory of pellagra, though it must be admitted there are not as many cornbreadists as once. Some of them even high up have changed politics quite recently.

The sandfly worshippers will be there. They seem to be increasing in numbers. Among their arch-deacons now are some of the erstwhile cornbreadists.

The protozoists, though not strong in numbers, compensate for it in enthusiasm. They remind one of a little story recently told in a British publication. A certain physician had specialized on stricture of the rectum. The net result was that every human ill that presented itself to him was referred to stricture of the rectum. He was literally obsessed with it.

Now it happened that a certain man from a distance, not knowing the physician's obsession, sent his daughter to him for treatment, for some minor trouble. Soon afterwards he heard about the old doctor's obsession, and set out to bring his daughter home—he would not even wait to write. But upon arrival the old doctor convinced him that he, too, had stricture of the rectum, and instead of taking his daughter home, he concluded to take treatment himself and also sent for his wife.

But the meeting will do good, viewed from whatever angle you choose. It will not settle the cause of pellagra, but it will impress the fact that the cause of it is still unknown. It will stimulate to research which in the end may finally ferret out the cause. It will not evolve any method of management for pellagra, but it will indicate our helplessness in managing a disease, when in total ignorance of its cause. It will also emphasize the serious proportions that pellagra is assuming, although it is small comfort to realize our danger without being able to circumvent it.

PUBLIC DECIDED FOR "NO SMOKING."

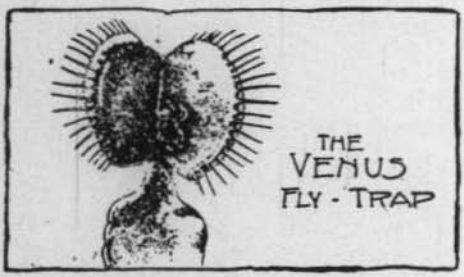
The newly awakened consciousness of the right of the people to decide things for themselves took a unique turn in Kansas City recently, when a referendum was held to determine as to whether smoking should be allowed on the street-cars of the city. There have always been quite a number of very decent people who could not understand why they should be forced to submit to the stench of forty-seven varieties of pipes, el cabbagoes, two-fors, coffin-nails, etc., simply because a minority of smokers assumed the right to pollute the air in this way. And this time they got their revenge.

There was a great squabble over a smoke rule adopted by the street-car company and the company took the politic course of leaving the matter to a vote of its patrons. The method of testing public opinion on the subject required extensive work and cost the company about $3,000. The balloting covered an entire week. With every fare paid a ticket was issued entitling the passenger to one vote. A thorough

system of checking and rechecking prevented any cheating or ballot-box stuffing. It took 1,200 ballot-boxes a day or 8,400 in all. At the end of the week thirty girls were set to counting the votes, of which over a million and a half were cast. The result showed about 609,000 for smoking, 908,000 against it and 18,000 indifferent.—*Pathfinder.*

NATURE'S FLY-SWATTER.

Now that the annual fly-swatting season is upon us, it is time to learn more about that wonderful invention of Dame Nature known as the Venus fly trap, or as the scientists call it the dionoea. An article in the *Technical World* tells about this curious plant, which in this country finds its home mainly in the swamps near Wilmington, N. C. A specimen transplanted into moss and rich earth will thrive in the house if kept very moist, and it makes the best kind of fly-trap for it



is always on duty and looks after itself. As the older traps lose their vitality fresh shoots appear and new traps are developed.

The Venus fly-trap is regarded as one of the greatest wonders of the plant world, for it seems to exercise a discrimination of taste that is more than human. It is provided with three delicate hair-triggers, and it exudes a sort of honey-dew that attracts the flies. Woe to the fly however that touches one of the triggers, for quick as a flash the two heavy leaves of the trap close upon the victim and crush it, much the same as an ordinary steel-trap acts. There is no escape for the fly when he is once in. The plant then settles down to digest its meal of fresh meat—this being one of the very few vegetables that take to a meat diet. A species of gastric juice is secreted by the closed trap and the body of the fly undergoes a process of real digestion, so that the nutriment is absorbed by the plant. Then when the fly has been sucked dry, the trap opens and disgorges the indigestible remains. Now, the most wonderful thing about the Venus fly-trap is that it knows the

difference between a nice, juicy, fresh fly and either a dead or injured fly or any foreign substance such as a stick. Touch the triggers with a lead-pencil and the trap will respond very slowly. Partly crush a fly so that it is not very lively and give it to the plant and it will still respond with very little show of appetite. But let a lively fly touch the triggers and snap go the jaws of the trap together, imprisoning it. Thus the plant prefers its meat perfectly fresh and also prefers to do its own killing. You have to be very watchful in order to see the fly-trap in the actual act of closing, for the process is almost instantaneous.

THE SCIENTIFIC PRINCIPLES OF VENTILATION IN THE LIGHT OF RECENT INVESTIGATIONS.

(Abstract of an address by Thomas R. Crowder, M. D., Chicago, read at the Second Annual School for Physicians and Health Officers, held at the University of Kansas, Lawrence.)

Ventilation is a much misunderstood subject. This seems to be due to the continuation of ancient errors in the face of enlightening modern research. The good effects of efficient ventilation and of outdoor living are generally supposed to be due to the chemical purity of the air. They are really due to the coolness, the relative humidity, and the motion of the air, acting on the great field of cutaneous sensibility.

Respiration may affect the chemical purity of the air in three ways: The concentration of carbon dioxide, the concentration of oxygen, and by the supposed excretion of harmful organic bodies with the breath.

Since textbooks on hygiene and on ventilation and heating generally specify that carbon dioxide shall not be allowed to go above a few parts in 10,000 of air, it is supposed that any greater excess acts as a poison. The truth of the matter is quite otherwise; for whatever the percentage of CO_2 in the surrounding atmosphere may be, that in the air of the lungs remains constant at about 5 per cent of an atmosphere, and it is maintained so by the action of the respiratory center. The air of the lungs is never pure air; it never even remotely approaches pure air, and no one breathes pure air into his lungs. At each breath we take back into the alveoli the expired air contained in the nose and larger bronchi, and this constitutes about one-third of the whole inspiration. This reinspiration is necessary in order to keep the CO_2 of the blood from falling too low. No excess of CO_2 enters into our bodies by breathing the atmosphere of the worst ventilated rooms, where the CO_2 certainly does not reach a higher concentration than 1 per cent of the

atmosphere. The only result of breathing such an excess of CO_2 is a slight increase in the depth of respiration, which is exactly adjusted to keep the concentration of CO_2 in the alveolar air at the normal 5 per cent of an atmosphere.

It has been pointed out by Lehmann and Hill that men who tend the fermentation vats in breweries work for long hours in an atmosphere containing 0.5 to 2.5 per cent of CO_2 and that they are healthy and long lived. Many investigators have subjected themselves or others to an atmosphere artifically charged with CO_2, and the results have uniformly shown that less than 3 or 4 per cent has no influence on the health of those who breathe it and can not be detected by them through any subjective channels.

The belief long obtained that the ill effects of confined and rebreathed air were due to the diminution of oxygen. Owing to the power of the hemoglobin to unite chemically with the oxygen of the air, the blood can adapt itself to great variations in oxygen concentration. It is able to take its full saturation from the alveolar air, which normally contains only about 15 per cent; on the other hand, it is not able to take up more oxygen even though the alveolar concentration is increased above the normal by artifical means. There is always, under normal conditions, a physiological excess of oxygen in the air. Pettenkofer subjected himself to an atmosphere containing only 16 per cent with no ill effects. The assistants of Flügge remained in a small air-tight cabinet for three or four hours with oxygen reduced by 1.5 to 2 per cent, and experienced no ill effects. Benedict kept men in an air-tight chamber of less than 200 cubic feet for almost two weeks, with oxygen reduced for long periods by more than 1 per cent, and he could detect no influence upon metabolism and no effect upon the senses of the occupant. Hill placed a group of students in a small closed chamber, where they reduced the oxygen to 16 per cent and raised the CO_2 to nearly 4 per cent. There was too low a percentage of oxygen to support combustion, but of this the occupants were quite unaware, and their health was not affected.

The experimental evidence shows that a decrease of oxygen in the air, unless this goes lower than about 15 or 16 per cent, is not perceived and produces no known harmful effects. A decrease of 1 per cent from the normal has not the slightest effect upon health or comfort or on the efficiency of labor; and a decrease of 1 per cent is rarely if ever exceeded in crowded rooms.

It follows that increase of CO_2 and decrease of oxygen far beyond

that found in the worst ventilated rooms is of no importance to the health or comfort. Forced to admit this fact, the hygienist has fallen upon the hypothesis that organic poisons are exhaled into the air, and has attributed to these the discomfort so often observed. It is necessary, he says, to keep the CO_2 below 10 parts in 10,000 of air, so that organic poisons may not collect to a harmful extent. For this hypothesis we are largely indebted to Pettenkofer.

The evil smell of crowded rooms is commonly accepted as evidence that the air is poisoned. Pettenkofer placed his limit of CO_2 at what he actually found to be present when one entering could just begin to detect the odor. This smell of crowded room is, however, only detected by one who comes in from without. Those who help produce it are unaware of and unaffected by it. Flügge points out that while we naturally avoid an odor that excites disgust, its offensiveness does not prove poisonous quality. Personal cleanliness has much to do with the odors of crowded rooms. They bear no constant relation to the degree of contamination of the air by the products of respiration. If everyone were perfectly clean we should be practically rid of them. Their effect is psychic rather than toxic.

The first serious attempt to demonstrate poisons in the expired air was made by Brown-Sequard and D'Arsonval, in 1887-88. They injected into rabbits and guinea pigs the condensation water from the breath, producing serious symptoms; and in a second group of experiments they made rabbits breathe the expired air of other rabbits by leading the air through successive air tight cages; after a variable time the rabbit in the last cage died. They concluded that they had proven the existence of a toxic principle in the expired air of animals, and that this was of basic nature. It was soon shown by many other workers that this conclusion was wrong. It was found that an equal volume of distilled water was about as harmful as the water condensed from the breath, and that this water contains no poisons in solution.

The experiment of the cages of rabbits was repeated many times, and it was found that the animals die only when they have so vitiated the air by decreasing its oxygen and increasing its CO_2 that it can no longer support life. The animals die only after CO_2 reaches a proportion of 10 to 12 per cent and the oxygen has been reduced to 8 or 10 per cent. Hill has very recently repeated these experiments, in one case leading the air from a chamber containing three rats into a cage containing a guinea pig, and in another case leading the air from a chamber containing three rats into another chamber also containing

three rats. He says: "The guinea pig lived in an atmosphere containing 3½ per cent of carbon dioxide and put on 100 grams of weight in three weeks, doing quite as well as another half-grown guinea pig kept under normal conditions. The rats in the second chamber did no less well. Thus the evidence obtained from this kind of experiment as to the existence of a poison in expired air is wholly negative. Brown-Sequard's result must be ascribed to suffocation arising from failure in experimental method."

These experiments are all against the existence of an expired poison, but they furnish no substitute for the poison theory. Something causes distress in crowded rooms, and the benefits of outdoor life are beyond question. What is it causes the benefit in the one case and harm in the other? Experiments on human beings and under natural conditions have recently answered this question satisfactorily.

Flügge confined people in a small cabinet of about 100 cubic feet for three or four hours without fresh air. During this time the CO_2 was increased from its normal 0.04 per cent to 1.5 or 2 per cent, with a proportionate decrease in the oxygen, yet these conditions could be borne indefinitely without ill effects provided the air was kept cool. Hill placed eight students in a similar air tight cabinet where they were forced to rebreathe their own and each other's exhalations until the CO_2 sometimes reached 4 per cent and the oxygen was reduced to 16 per cent, and they also suffered no ill effects so long as the air was kept cool. Hough did much the same thing, without harm to his students. Even more remarkable are the results of Benedict. He kept men in an air-tight chamber for from two hours to ten days and more, without the addition of fresh air other than the introduction of sufficient oxygen to replace that consumed by the body and the removal of CO_2 by caustic soda; but the respiratory contamination was almost constantly sufficient to maintain the CO_2 around 1 per cent and sometimes more than 2 per cent. Throughout all of these experiments no symptoms of illness or discomfort developed so long as the temperature and moisture were kept low. Tests for psychic fatigue also gave negative results when the temperature and moisture were kept low.

The effects were very different, however, when temperature and humidity of air of the cabinet were allowed to increase. When the temperature rose to 80 degrees F. with moderate humidity, or to about 72 degrees or 73 degrees with high humidity, practically all persons began to show depression, headache, dizziness and a tendency to

nausea, with minor differences in susceptibility; but the results uniformly demonstrated that the ill effects are independent of the degree of contamination of the air with the products of respiration, and are closely related to temperature and humidity. When the temperature of the surface of the body reaches 93 degrees to 95 degrees in healthy people, discomfort and mild illness is produced regardless of the air purity or air impurity. The ill effects are due to the inability of the air to take up the excess of heat from the body.

The heat constantly formed in the body is brought to the surface by the warm blood stream, and it must be removed. About 80 per cent of it is transmitted to the air through the skin. If the air is cool it takes up the heat rapidly and the stream flows on; if the air is hot the surface becomes flushed, blood stagnates in the skin, and metabolism is depressed. When discomfort appeared the people in the cabinet were allowed to breathe the pure outside air through a tube, and it gave them no relief; nor did the highly contaminated air of the cabinet produce any effect when breathed through a tube by one on the outside. But the symptoms of discomfort could be almost immediately relieved by putting the air of the cabinet in rapid motion by means of an electric fan, by lowering the temperature, or by drying the air. These physical changes make the air more capable of taking up the excess of body heat, and on this the good effects depend.

It seems to be established beyond any reasonable doubt that the discomfort we know as vitiated air, closeness, stuffiness, inefficient ventilation, etc., is due solely to physical conditions which lead to heat stagnation in the body. The high temperature of the atmosphere, its moisture and its stillness are responsible for the bad effects. The good effects of efficient ventilation and of outdoor treatment are not due to the chemical purity of the air, but are due to its coolness, its relative humidity and its movement, and to the ceaseless variation of these qualities. Hill has wisely given prominence to this matter of variation.

Nothing that is said should be interpreted as an argument against the benefits of fresh air and the outdoor life. Quite the reverse is true. When many people are crowded together in a small space they very soon overheat the air, and its depressing effect is added to by its stillness and the moisture inhaled with the breath. More air and cooler air, which is the only air possessing the quality we generally recognize as freshness, must be supplied.

From this it follows that the impulsion of hot air into a room is the most objectionable of all systems of ventilation. Cool air and

radiant heat are the ideal combination, and the old-fashioned open fireplace has much to recommend it. It is the heat and windlessness that cause the trouble, and people should go more and more into the open, not because they may there breathe chemically purer air, but its coolness and its constant motion stimulate the skin, increase metabolism, and aid in the development of a sturdy and resistant body. Herein lie the hygienic and therapeutic virtues of the open air. We can not take up more oxygen than is required to do our work, and this can be readily supplied even by a partially exhausted atmosphere; but we can make more heat if the air will take it, and in doing this we both consume more oxygen and burn our fuel to better advantage. This is the basis of the outdoor treatment of tuberculosis, where to increase metabolism is so important. We may help to prevent many ills by supplying our houses, our schools, and our work places with cool, circulating air. We need to develop a new point of view; the success of ventilation depends much more on supplying proper physical conditions for the outside of the body than chemical conditions for the lungs. A little cold air may be vastly better than a large amount of warmed air.—*From "Bulletin" of the Kansas State Board of Health.*

NOTICE.

On Friday, November 1, 1912, at the offices of the State Board of Health, Jacksonville, Fla., will be held a competitive examination, to fill the position of Assistant State Health Officer, for field service. Age limit between 25 and 40 years.

No one eligible who is not a licensed physician in the State of Florida, and who is not in affiliation with the medical profession.

Salary, $1,600.00 a year and traveling expenses.

Examination will embrace general scholarship, diagnosis, immunity, serum-therapy, current medical and public health literature, etc.

"The University of Chicago has received $5,000 from Mrs. Myra T. Ricketts, widow of the late Howard T. Ricketts, Assistant Professor of Pathology in the University, to found a scholarship to be known as the 'Howard T. Ricketts Prize.' This prize is to be awarded annually for the best piece of research presented by any student in the department of pathology and bacteriology. Dr. Ricketts lost his life in 1910 in the city of Mexico, from typhus fever, which he contracted while engaged in the scientific investigation of the disease."—*Science.*

It was Dr. Ricketts who showed that typhus fever is transmitted by lice, as malaria and yellow fever are by mosquitoes, and as Texas fever among cattle is transmitted by ticks.

The vast strength of the grizzly bear has often been commented on by naturalists. A California man now tells of watching one of these huge creatures recently in the act of carrying a dead cow home to her cubs. The bear carried the carcass, mainly in her forepaws, over the roughest kind of country, over rocks, fallen logs, etc., and along narrow ledges, for a distance of three miles, without once stopping to rest.—*Pathfinder.*

A certain man had a country house and lo and behold a horse came and fell dead, nigh unto his door. Now when he saw that the horse was dead, he wot not what to do to get him away from his house. In his perplexity he requested the man who owned the horse to move him away, but the man would not. Seeing the man would not move him, when the horse began to stink he wrote a letter to the State Board of Health, which is in the city of Jacksonville, but the State Health Officer made answer that the law did not direct that he should move the horse.

And it came to pass that when he got no relief and the stink was terrible to bear, the man took his wife and his children and his household goods and moved a comfortable distance, and there rested till all that remained of the horse was dry bones, and he stank no more. And when the man saw that the horse was only dry bones, and stank no more, he took his wife and his children and his household goods and moved back to his home, and there abode in peace.

Tommy—Pop, what is the difference between a monologue and dialogue?

Pop—When two women talk, it's a dialogue, but when a woman carries on a conversation with her husband, it's a monologue.—*Pathfinder.*

Teacher, to class of small boys: Isn't it fine that any boy can aspire to be president of the United States! How many would like to be president? (All hands up but one).

Teacher—Wouldn't you like to be president, Johnny?

Johnny—Yes'm, but I can't; I'm a democrat.—*Exchange.*

Husband, who arrives at the station with his wife just in time to see the car pull out—There you are; if you had hurried yourself a little more we should not have missed it.

Wife—Yes, and if you hadn't hurried so much we wouldn't have had to wait so long for the next one.—*London Titbits.*

Minister—Fishing on Sunday! Your father should be informed of this. Where is he?

Boy—Back of the barn diggin' bait.—*Pathfinder.*

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FLORIDA

Health Notes

IN GOD WE TRUST

OFFICIAL BULLETIN

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EXECUTIVE OFFICE AND CENTRAL LABORATORY:
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Address communications to Jacksonville, Fla.

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*" * * * the Truth is too mighty a Drug for such as be of feeble temper."*—John Hay

RABIES IN CALIFORNIA.

They have been having hydrophobia in California, too. Of course they give the Pasteur treatment. The State furnishes it for the indigent. But:

The patient has to go to one of the branch laboratories to get it. In Florida the treatment is sent to the family physician. It is much less trouble and also less expense.

PLAGUE INFECTED GROUND SQUIRRELS IN CALIFORNIA.

That they are not through with plague in California is attested by the fact that during the week ending August 10 twenty-eight infected ground-squirrels were found in Contra Costa and Alameda counties. If the people of California should let up on the fight the plague would begin to increase and soon it would be among human beings again, as in 1907. Of all conquerable diseases plague is perhaps the most stubborn.

HAVANA FREE FROM PLAGUE.

Havana is now considered free from plague. Total cases to date three, and the last one died July 27th. There is no restriction on passenger travel between Havana and America now. Efforts are kept up to prevent rats coming over, however.

HIS GEOGRAPHY A LITTLE OFF.

The *Buffalo* (N. Y.) *Express* the other day published a little running comment on yellow fever at Frontera "on the Gulf Coast of Florida." I suppose southern Florida and southern Mexico do seem about the same distance from Buffalo. Reminds me of the Englishman, who fresh from London, arrived in Chicago and hurried the waiter with his bath, because he had to call on some friends in New Orleans after tea.

MEASLES IN MANILA.

Ordinarily measles in Manila are very mild. About the middle of 1911, however, the disease started up and spread with great rapidity, and what is more it was characterized by unusual severity. This leads

to suspect that it is a new strain from the North, where the disease is generally more severe than in Manila. It is quite certain that one strain of a disease may be much more severe than another, just as one strain of corn will be more prolific than another; just as one strain of vaccine will be more potent than another.

FLIES.

So much has been said about the danger of the housefly when permitted to wander promiscuously from filth to food, and the necessity for guarding against his invasion and too intimate acquaintance that it seems useless to dwell upon this unpleasant subject longer.

It is rather surprising when we stop to consider that for so long we have been assiduously laboring and perspiring freely in our more or less futile efforts to kill flies inside the house. The logical way is to catch him before he gets inside and still more logical to prevent his ever coming into existence at all. This last phase of the subject will be discussed in another article.

But one of the sanest, safest means of preventing flies from doing their deadly work inside the house is to catch them by means of large traps placed outside the kitchen door or other doors where they will find entrance. At Vanceburg these traps were made of banana crates baited with molasses, fishheads and other delicacies especially pleasing to the refined fancies of his lordship, the fly. These crates were simply made with fly screen covered over the top, with a funnel stuck in the bottom of the trap, the large end pointing upward. The traps were set upon blocks with the bait beneath. They were placed at kitchen doors, in front of groceries, in the rear of livery stables, by manure piles and garbage cans, and at other places where flies congregated and bred. These traps caught flies not by the hundreds but by quarts, pecks and half-bushels. As a result Vanceburg was the town freest from flies of all the places we had an opportunity of visiting.

This idea should be adopted by every county and city Board of Health, and recommendations to do this should be published in the papers and circulated in every possible way that the people may in the future protect their health and lives by this novel and successful method of dealing with the housefly.—*Bulletin of the State Board of Health of Kentucky.*

HEALTH MAXIMS STOLEN AND REVAMPED.

Spare the cure, kill the child.

Fresh air is the best life insurance agency.

Colds are easily "caught" but hard to lose.

Good health is priceless, yet it is without price.

Alcohol is a preservative, but not of the health.

Coddle yourself and you invite pneumonia.

"Dope" for colds is "dough" for the doctor.

Why be afraid of a little fresh air in winter?

Coddling; preparing for consumption and pneumonia.

The best defense against disease is the simple life.

Cheap candy—expensive funeral. Why take chances?

Colds are not caught from fresh air, but from stuffy air.

To neglect sore throat is to give the undertaker a job.

Pure air makes pure blood; pure blood makes you disease-resisting.

Sixteen to one. An ounce of prevention is equal to a pound of cure.

Health is not put up in bottles, and cannot be bought at the drug store.

Don't wait till tomorrow if the child has sore throat. Call the doctor at once.

The more sunlight and fresh air in your house, the less the need of a doctor.

What some thrifty (?) people keep from the doctor they give—to the undertaker.

Tea, coffee, and alcohol are stimulants—not foods. They lift one up to drop him hard.

Don't hibernate; ventilate. Plenty of fresh air will make the fires of life burn brightly.

Do not forget that the pores of the skin need to be open in winter as well as summer. Bathe often.

The chest-protector man should throw no stones at the woman with peek-a-boo waist and lace hose.

Robbing one's self of sleep is putting a mortgage on future health and happiness. Nature will surely foreclose.

Chew your food; your stomach has no teeth. The hen swallows her food without chewing, but she also swallows grinders.

Don't begrudge the doctor his fee. See him when needed and pay him cheerfully. The undertaker charges higher than the doctor.—*From Journal of the Outdoor Life.*

Dr. W. H. Frost, of the United States Public Health Service, does not recommend wholesale and retail quarantine in the management of cerebro-spinal fever. But isn't that refreshing!

A bill passed the house providing heavy penalties for the publishing of claims for "cure-all" medicines which are not substantiated by the facts. If this bill becomes a law it will strengthen the hands of the government in running down the medicine fakers.

THE LARGEST TAPEWORM.

The longest tapeworm yet recorded from the human being has just come to light. It is reported by Capt. W. E. C. Lunn, of the Royal Army Medical Corps, and is seventy-nine feet and four inches long.

The patient was a generally healthy woman, of good physique, and only complained that she felt obliged to eat very large meals.

SALVARSAN AND MALARIA.

Salvarsan, commonly known as 606, that has won for itself such a reputation in the treatment of syphilis, has been tried out with malaria, with indifferent results. In fact, it appears according to Tuschinsky's report that it is only the cases of benign tertian that respond at all to treatment while the quartan and the aestivo-autumnal among which the most malignant cases appear, are not benefited by it. It appears, furthermore, that with smaller doses of salvarsan the malarial parasites develop a tolerance for it.

POPULAR "SCIENCE" AGAIN.

It is perhaps worth while calling the attention of the readers of "Science" to a fresh contribution to the pseudo-scientific literature of this country. In a recent number of *Mother's Magazine,* Dr. Cornelia B. DeBey writes concerning weeds as follows:

"Weeds may not seem (to you) to have much connection with your home hygiene, but they do have. Growing under the bedroom window, thriving in a corner of the yard, lining a back walk, they are constantly, through their nature, absorbing floating air poisons. As the period of their annual decay approaches, they throw off these poisons and the

winds gather them up and sweep them through the house. They are blown into your lungs and into the lungs of your children. If perchance the system of any one of you happens to be weak at the time, a sickness may almost certainly be expected to follow.

"Weeds of the yard, like the foul dust of the streets of a city, carry millions upon millions of germs eager to thrive on any frail human or animal body. Root out the weeds. Treat them with scalding hot lye and wood ashes that have been soaked in hot water. Attack them with hoe and spade. Certain noxious weed growths, very common to American yards, may breed dipththeria, typhoid fever, scarlet fever and serious catarrhal affections."

The spirit of the foregoing is doubtless highly commendable, but the ideas of the causes of diseases inculcated in such a statement, are, at the very least, undesirable.—*Ernst A. Bessey in Science.*

In London they are talking about foot-and-mouth disease of cattle being transmitted to children, particularly through the milk. It is pointed out that the disease, while not common in England, is certainly met with and that it is not uncommon on the continent.

It concerns us as general information only, since we have no foot-and-mouth disease in America. It is true that we might get the disease introduced again, since it is communicable, and we might not get it so completely eradicated next time as we apparently did the last and only time it has ever been introduced. But until that time we will rest in peace on the score of foot-and-mouth disease.

RIGHT AROUND US.

Prof. Hugo De Vries, one of the most noted botanists of the age, it is said will visit this country again this fall. He will visit the Botanical Gardens of New York, and will go to the University of Pennsylvania, where Prof. Davis' botanical work is attracting attention, and then he will start south. Among other places that he will visit are the "mud lumps" near the mouth of the Mississippi river. Thus there are things right here at home that Prof. De Vries thinks it worth crossing the ocean to see. That is because he has eyes that he can see them with.

A SWEET PEA SOCIETY.

They have a sweet pea society in Boston. It recently had an annual exhibit of sweet peas in Horticultural Hall. A lecture was delivered on the disease of sweet peas and how to control them.

It would seem that a bean society might be more to the purpose. But after all Boston may believe with Victor Hugo that "The beautiful is as useful as the useful." Certain it is that those who study the diseases of sweet peas and their methods of control are in better position to understand the significance of disease in general, and to appreciate the methods of control.

PELLAGRA AND LEPROSY IN WASHINGTON—REPORTABLE BUT NOT QUARANTINABLE.

We have just received "Rules and Regulations of the State Board of Health of the State of Washington for 1912." We note among the diseases "reportable" but "without quarantine or isolation" are both pellagra and leprosy.

We extend our congratulations.

North Dakota has passed a law looking to the ultimate freeing of her cattle of tuberculosis. Cattle are to be condemned and paid for by the State, upon application of the owner, who in turn agrees to use his best endeavor to keep from getting them re-infected. A special tax is levied for the purpose.

A law has also been passed governing the importation of live stock. Withal the State Live Stock Sanitary Board regards the laws of that State as satisfactory.

Some Doubt—In a certain school dedicated to the uplifting of the colored contingent of the State, a boy was sent to the blackboard to write a sentence with the word "doubt" in it. When he finished it ran: "I come to school dout my breakfast."

Mrs. Newly-wed—"I am going to cook dinner myself today, dear, what would you like?"

Hubby—"Er-er-hard boiled eggs, please."—*Pathfinder.*


PUBLIC
HEALTH
MEETINGS


AMERICAN PUBLIC HEALTH ASSOCIATION
CONFERENCE OF PROVINCIAL HEALTH OFFICERS OF N.A.
XV INTERNATIONAL CONGRESS OF HYGIENE & DEMOGRAPHY
WORLD
AFTER A FAMOUS PAINTING

MYCOTIC STOMATITIS—A DISEASE IN THE MOUTH AND FEET, IN CATTLE.

BY

Charles F. Dawson, M. D., D. V. S., Veterinarian, State Board of Health.

During the summer and up to the present time there has prevailed in many parts of Florida a disease in cattle which manifests itself by soreness of the lips, mouth, feet, teats and udder, by nasal catarrh, and by a tendency to remain lying down. Correspondents state the animals are sore and stiff, won't eat, lie down much of the time, and when made to get up, act like a foundered horse.

This disease is not a new one, as it has occurred in Florida in the past, and is frequently found in the Eastern, Central Western, and in the Southern States.

The disease is known by various names, as mycotic stomatitis, noninfectious foot and mouth disease, aphthous stomatitis, sore-mouth, sore-tongue, etc. The authorities of the Bureau of Animal Industry prefer the first mentioned name, *mycotic stomatitis,* because, as that name indicates, it is a disease of the mouth resulting from the ingestion of forage infected with a fungous disease.

Mycotic stomatitis is not an infectious disease and is frequently so mild in character that it escapes notice, or does not demand serious attention. There are cases, however, in which all the symptoms appear in an aggravated form, and which end fatally. Animals of all ages may be affected. The disease rarely or never attacks all the members of a herd, and seems to affect milch cows oftenest, although the range animal is not immune. Although it closely resembles the infectious foot-and-mouth disease of Europe, the fact that it does not rapidly spread from animal to animal, that hogs and sheep remain unaffected, and that no people have become affected from using the milk, it is easily differentiated from that very serious bovine disease, Aphthous Fever, or Foot-and-Mouth Disease, of European countries.

The actual cause of the disease has not been determined, but it is known that the various rusts and fungous deposits which occur on forage plants are very irritating to the lining of the mouth, and thin skin at the margins of the hair and hoofs, and to the skin between the claws, as well as to the skin of the teats and udder. Certain climatic conditions are required to produce an outbreak, and this fact explains the appearance of the disease at irregular intervals and in different localities. It may be expected to appear when a hot, dry period is

followed by excessive rain, because such conditions produce a luxuriant growth of molds and fungi.

The first symptom is the refusal of food because it is painful for the animal to take food. This is followed by "loss of the cud." There are frequent movements of the lips and a collection of froth forms at their margins. The appetite is not entirely lost, as the animal will nibble at the softer parts of the hay, and will swallow food placed upon the back part of the tongue. Examinations of the mouth and tongue will reveal the cause of the refusal of food. These parts will appear red and sore, and small blisters, which soon burst and form ulcers an inch or more in diameter, will be found. In bad cases the ulcers may appear on the outside of the lips and on the muzzle. The disease frequently extends up into the nasal cavities, producing a yellow catarrhal discharge from the nostrils.

The feet become sore in the pastern regions. The fore, hind and sometimes all four feet may be simultaneously affected. Sometimes blisters and ulcers are noted at the union of hair and hoof, and also between the claws. When the animal lies down to relieve the pressure upon the sore feet, it will frequently remain down for long periods. When it rises, it walks stiffly and the owner is very apt to locate the trouble in the muscles or joints, and to speak of the animal as being "foundered." While there may be some fever, it is not a prominent symptom, and the temperature is frequently found to be normal. Sometimes there is diarrhoea, the passages being dark and foul-smelling. In some cases the teats become fissured or cracked, and painful to the touch. Milk secretion is diminished, or suspended early in the course of the disease, and as may be imagined, loss of flesh is rapid, in many cases. It thus becomes, even when occurring in a mild form, a very serious trouble to the dairyman, or to a family where the children depend upon the milk for food.

Mycotic stomatitis is not, of itself, a serious disease, in most cases, and recovery will take place in ten days, in the majority of cases, when the animal is removed from the pasture which caused it, and when the proper remedies are applied. In its worst forms, the animal may die in ten days, or less.

Treatment. The first and most important thing to do is to remove the animal from the offending pasture, and provide it with soft feeds, such as bran, mashes, ground feed and gruels. The finer parts of the hay, when moistened so as to soften it, will probably be taken by those mildly affected, as the appetite is not entirely lost. It is important

that the animal be provided with cool water. The mouth should be swabbed out three times a day with an antiseptic, such as a two per cent. solution of carbolic acid, or of creolin, and this should be followed by a half tablespoonful of finely powdered alum or borax, placed upon the tongue. When desired, the carbolic acid wash may be given in another and more convenient way. Instead of the wash, thoroughly mix two tablespoonful of pure carbolic acid in a quart of bran mash, every morning, and give to each full grown animal, for a period of five days. Reduce the amount of carbolic acid when treating a calf, or yearling. Range animals may be given the carbolic acid treatment most conveniently by thoroughly mixing four ounces of *crude* carbolic acid with twelve quarts of table salt and placing this mixture in troughs protected from rain. The feet should be bathed with a two-per cent. solution of carbolic acid or of creolin. The cracked teats should be anointed with carbolized vaseline. When an animal has had a rather severe attack, as has frequently happened in the present outbreak, a tonic powder should be given when the animal begins to eat, of its own accord. The following tonic stock powder is recommended:

Linseed meal	16 ounces.
Fenugreek	8 ounces.
Ginger	6 ounces.
Common salt	8 ounces.
Hyposulphite of soda	4 ounces.
Sulphate of Iron	2 ounces.

Mix thoroughly and give a handful in the feed to each full grown animal. Give less to calves and yearlings.

The State of North Dakota complains that cattle are being shipped into that State with bogus inspection certificates. This applies particularly to Illinois. The latter State does not require any inspection of cattle entering. Hence cattle that would be excluded from other States find ready market in Illinois. The next consequence is that cattle will be cheaper in Illinois than in those States requiring rigid inspection. Hence we are not surprised to hear that the people of North Dakota "on account of market conditions" go to Illinois to purchase cattle. There the market is best supplied. The only trouble is getting them to pass inspection for a State that inspects them. Hence arises the bogus inspection certificate and the ruling of the Live Stock Sanitary Board of North Dakota that cattle will not be accepted from Illinois unless inspected by the Federal Bureau.

IS BAKER'S BREAD STERILE?

Drs. B. von Fenyvessy and L. Dienes have raised the question as to whether baker's bread is sterile, *i. e.* it is sterilized in the process of baking. They set to work to answer the question. They found that the inside of the loaf reaches a temperature of 94 degrees to 104 degrees (C. we presume), from which they conclude all non-spore bearing organisms are killed; but that dough contains spores of fungi, which are not killed by baking and that bread is therefore certainly not sterile. It is always possible, they say, that pathogenic organisms that produce spores might survive the process of baking. They admit, however, that no case of infection has been traced to such a source.

But just you look out for it now. The authorities have pronounced it possible, and that is enough. Pretty soon some man will have a case of diptheria that hasn't been exposed, and then it will be remembered that the child had eaten some baker's bread, and to clinch it, it will be found that on the day of the last baking some stranger had been in the bakery and that the said stranger might have been a diphtheria carrier, and the thing is clear as daylight.

That the diphtheria bacillus is a non-spore bearing organism will not cut any ice, since one man's opinion is worth about as much as another's among those who don't know.

And then among the dangers will be not only the drinking cup and the waiter's towel, but also the baker's bread. Ah me!

WHOLE WHEAT VS. WHITE BREAD.

A series of experiments has lately been carried on in Cambridge, England, that shows that whole wheat bread is no more nutritious, and no more digestible than white bread. In fact the difference in digestibility and nutrition was found to be so little as to be a negligible quantity. Those poor souls who have recovered from indigestion simply by shifting from white to graham bread will have to take refuge behind some such doctrine as "they only thought they had indigestion."

But, remember, that if you want to be right up to date on digestibility of bread, you must discard this time-honored and much advertised dogma and acknowledge that bread is bread.

THE HIGH COST OF LIVING AND IMPROVEMENT IN QUALITY OF FOODSTUFFS.

Senator Burton, of Ohio, in an address before the senate on July 30, discussed at length the things that make for the high cost of living.

Like those who have gone before him, he failed to mention one rather important item, namely: *The improvement in the quality of food supplies has augmented the cost.*

Take milk for example. It costs more to produce clean milk than it does to produce dirty milk. A few years ago, when dirty milk satisfied, milking was classed as unskilled labor. Consequently it was of the cheaper sort.

But now the people demand clean milk. It requires a considerable degree of skill to produce clean milk. That is why passing ordinances doesn't produce it. Ordinances must be supplemented with skill. And this skilled labor costs more than unskilled.

It also costs to ice the milk. This is to be added to the additional cost imposed by cleanliness.

It also costs to have milk from tuberculosis-free herds. In the North in particular, some fifteen per cent. of the dairy cattle are tubercular. To throw out these tuberculous cows costs some fifteen per cent. of the capital stock of the dairyman.

Then it costs to maintain the necessary machinery to be sure that we get what we demand. It is not so easy to estimate the cost of checking the milk and dairy herds, but it is considerable.

All these costs have to be added together and added to the cost of clean milk as contrasted with dirty milk. No wonder clean milk comes high. No wonder food stuffs are high. Our demands are exacting. We must expect to pay for them.

It must not be inferred from this that we do not realize adequate returns for the added cost. Probably we do many times over in reduction of sickness and death rates. Where dirty milk is used the infant mortality rate is high. The cost of looking after sick babies is great, to say nothing of those that die. It is likely that this item alone is sufficient to defray the additional cost of clean milk. But the saving is not where it can readily be seen, while the cost is both seen and felt.

That Senator Burton finds this additional cost in all the more advanced countries is to be expected, since all the more advanced countries are looking after the purity of their food supplies as they never have before.

These remarks do not apply to milk alone. Other food stuffs are as assiduously guarded as milk. The federal meat inspection service

costs some millions of dollars a year, which has to be added to the cost of the meat. And more than that all condemned meat has to be subtracted from the supply. And more than that, the packers legitimately add the value of condemned meats as part of the cost.

And so on throughout the catalog of foods, more here, less there, but something is to be added almost everywhere for additional care, and consequent cost either in production or distribution.

So, whatever other factors may be reckoned with, the improvement in the quality of foodstuffs should not be overlooked.

ABOUT PEARLS.

Pearls are found in a considerable number of molluscs, but are most common in the pearl oyster of Ceylon and in certain fresh water mussels.

It used to be thought that a grain of sand accidentally lodged in the oyster or mussel set up an irritation and this in turn caused the formation of the pearl. It is well known that an irritating substance may have this effect. The Japanese take advantage of this and insert a small leaden image of Buddha into the oyster, between the mantle and the shell. In a short time the image becomes covered with a pearly concretion, and is firmly adherent to the shell. When they have reached a suitable size they are carved out of the shell and sold, but they always have one bad face—that which was adherent to the shell. They are therefore mounted in such way that the defects can be hidden in the mounting.

But the beautiful and costly pearls of commerce have a very different origin. Those of the Ceylon oysters, which are the finest in the world, are caused by the larvae of a tape worm. The young tapeworm becomes embedded in the oyster, and if by chance dies in there, the dead body serves as a nucleus round which the pearl is gradually slowly laid down. As long as the tapeworm lives no pearl will be formed. Some thousands of tape worm infected oysters are found to one pearl. The pearl of the mussel is caused by a fluke.

The valuable cystic pearls, thus it will be seen, have a nucleus round which very thin layers of calcium carbonate are laid down. The process is not unlike the formation of gall-stones in the human being. It is doubtful if the oyster suffers from pearl colic.

It is a pity that gall-stones are not as valuable as pearls, or at least sufficiently valuable to pay the surgeon.

PUNISHING IMPUDENCE.

A farmer driving along a country road was thus accosted by a young upstart: "Hello, Reuben, give me a lift to Hightown, won't you? I might as well ride as walk," and with that he climbed up into the farmer's wagon and continued to chatter, while the old man listened in silence. Finally he said: "It's a good thing I met you. Quite a way to Hightown, isn't it?" After they had gone a few miles further he said: "How far is it to Hightown, anyhow?"

"Well," said the old farmer, "The way we're goin' I should judge it's about twenty-four thousand miles, but if you were to git out and walk back, I should say ten miles or so."—*Youth's Companion.*

A Mortal Blow—"What's the matter with your wife, she's all broken up lately?"

"She got a terrible jar."

"Why, what happened?"

"She was assisting at a rummage sale, and took off her new hat and some one sold it for thirty-five cents."—*Literary Digest.*

A certain man was telling how he had dodged the health officer and escaped vaccination, whereupon the old doctor told him he was like the Irishman that "beat" the railroad. Pat was telling with great gusto how he had beat the railroad, and when asked how he did it, replied: "Bejabbers, I bought a return ticket and ain't going back."

Frenzied Finance—An old negro deposited a small amount in a negro bank. After four or five years he called for it, as follows:

Depositor (at the cashier's window): "I wants my money out o' dis here bank."

Cashier (after hunting through the books): "You aint got no money in dis here bank; de inte'st done et it up."

Time to Begin—"Mamma, I want some water to christen my doll," said Ethel, of four.

"No, dear," answered her mother reprovingly, "it's wrong to make sport of such things."

"Then I want some wax to waxinate her," said Ethel, "she's old enough to have something done."—*Ladies' Home Journal.*

FLORIDA

Health Notes

IN GOD WE TRUST

OFFICIAL BULLETIN

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Ill fares the land to hastening ills a prey,
Where wealth accumulates, and men decay.—Goldsmith.

FIFTEENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY AT WASHINGTON.

WASHINGTON, September 23.

After two days of ideal weather the morning for the inauguration of the Congress opened with drizzling rain, varied by an occasional downpour. By dispensing with a good deal of formality, members who had not received their tickets got through without them, and thus there were none of those lusty complaints which generally herald the opening of great congresses of this description. At the opening ceremony the general secretary explained that it had not been possible to give everyone an invitation for the president's reception, but all members of the Congress were to go to the reception first of all, and probably they would receive the invitation afterwards. What, however, may be regretted is the fact that on the Sunday, when almost every member of the Congress had arrived and did not in the least know what to do with himself, there was no Congress office open where to obtain correspondence, tickets, invitations, programmes, and so forth. With every place shut, and the sale of most refreshments rendered illegal on the Sunday, it is rather difficult for a stranger to feel welcome. One of the representatives of the French government had to sign three legal documents so as to obtain a glass of beer, and Dr. Jacques Bertillon, having asked a chance American acquaintance how he could best dispose of his Sunday, was advised to visit the cemetery! After that it must be admitted the English are not alone in "taking their pleasures sadly."—*The Lancet.*

(From the Lancet, London, Eng.)

My expectations, hinted at in my communication last week, written preliminarily to the opening of this Congress, have not been fulfilled. I expected a greater popular success for our deliberations, but there is no doubt that the Congress on Tuberculosis held at Washington just four years ago evoked much more enthusiasm and was more widely supported by the American profession and public than the analogous Congress of Hygiene and Demography. It is not easy to explain the marked difference in attitude except on the ground that the anti-tuberculosis agitation in its fullest force was something new to an American public. Both the medical profession and the public had only recently realized that in regard to cure, but more especially in respect to prevention, new facts had been discovered engendering greater hope. The

leaders of thought in America were as far forward as any of our European savants, but the American public lagged behind. When we come to hygiene generally, nothing startling has of late been brought forward comparable to the recent developments in the treatment of tuberculosis, and that is, perhaps, the reason why fewer members have joined this Congress. It is all the more regrettable as this Congress is better organized and has received greater encouragement from the highest quarters. Nevertheless, not even the local papers give the president's opening speech in full. It was a remarkable speech and of interest to all. Mr. Taft, with all his well-known genial manner, said many things which should gratify sanitary reformers and closely interest the general public. He extolled the science of prevention, which, he said, "came into being from nothing and was now achieving the greatest of things." Much of the work was still done for, and the greatest services had received, scant reward. But the president, while acknowledging this national shortcoming, added: "We need to develop under governmental auspices a bureau or department in which the funds of the government shall be expended for research of every kind useful in the practice and enforcement of hygiene and preventive medicine. That something of this sort may grow out of the present United States Public Health Service, there is reason to hope, but it will need far greater appropriations and a widening of its scope of duties before it shall have filled the place that the medical profession of this country has a right to expect that the general government will create to ensure the progress of hygiene and demography."

This passage should be utilized throughout the United States, and Mr. Taft and all succeeding presidents kept up to this mark. It was an original thought of the president to claim that the war in Cuba had saved more lives and money than it had cost because it had compelled the authorities to take the necessary measures to free those countries from yellow fever and malaria. "When we first went into the tropics our purpose was to make that region habitable for white people. We have now demonstrated that as a possibility." There was also the possibility of regenerating the tropical races. They survived the attacks of parasites, but these impoverished their blood and lowered their energies. If, with better hygiene, such infection could be prevented, a new people with greater energy and larger faculties would be brought into existence. The Medical Corps of the American Army had made this possible by their important discoveries in regard to the transmission of disease in the tropics. But for their work the construction of the

Panama canal would not have been possible. Here President Taft made the great pronouncement of his speech. He considered that whatever honors were due to the chief engineer, who had planned and directed the work of piercing the Panama canal, were equally due to the chief medical officer, who had rendered this achievement possible by preserving the lives of those who were engaged in realizing these plans. The French had failed in a much smaller undertaking because their work-people were decimated by disease. The success of the Americans was due to the progress that had since been accomplished in sanitary science. As a direct result, 50,000 people had been kept alive on the Panama works. It is true there had been no limitation as to expense, and there still remains the task of keeping the canal healthful now that it is nearly built. For this we must have an effective government. The president could not conceive a more useful congress than that of hygiene and demography. It was delightful to contemplate an organization formed to develop peaceful arts to the common interests of humanity, and this offered a relieving contrast to the burdensome and ever-increasing preparations for war. The sanitary reformer won the highest human sympathy. He earned rewards that could not be measured in money. They had the consciousness of the highest duty well done.

AN INTERNAL MUSEUM OF NATURAL HISTORY.

In the October number of *Science* Wm. A. Riley reports a case of a man having five different kinds of animal parasites.

The most interesting of these animals was the Schistosoma haematobium—interesting because not common in the country, only a few cases having been reported. It is a singular beastie living in the portal vein of the human being, but no one knows how it gets there. (The portal vein is a large vein that collects blood from the intestines and empties it into the liver.)

He also had ascaris lumbricoides, or round worms, for which grandmothers usually give jerusalem oak seed candy.

Strongyloides stercoralis.

Trichuris trichiura, and

Necator americanus, or hookworm, completed his internal museum of natural history.

Teacher—Children, what is the plural for forget-me-not?

Little Boy (positively)—Forget-us-not.—*Woman's Home Companion.*

GUILTY, BUT NOT PROVEN, SAID OF "SPOILED CORN."

PELLAGRA EXPERTS ADMIT THEY KNOW NOTHING EXCEPT DISEASE INCURABLE.

Columbia, S. C., Oct. 5.—That the cause of pellagra is unknown, though the suspicion against "spoiled corn" is sufficient to lead to legislative measures to prevent its use as food; that there is no known specific remedy for the disease; that there is no proof that the malady can be transmitted directly from man to man, and that the plague forms one of the most pressing problems in American medicine, were the findings of the National Congress for the Study of Pellagra, which closed its second triennial conference here last night.—*Associated Press Leased Wire.*

And so the congress for the Study of Pellagra at Columbia, S. C., this past month, brought in a Scotch verdict of "not proven" against corn or maize as the producing cause of pellagra. Just so, the State Board of Health of Florida has all along taken this position and was still more pronounced in its declaration that pellagra was not contagious, leastwise there was no direct proof or evidence that it was. Now, how about those State Boards of Health who went "up in the air" and ordered all cases of pellagra to be quarantined? It looks like they have hold of the end of a live wire which they can't very well let go, or putting it plainer, they can not explain to the people why they went off "half cocked." It is just this kind of "frenzied" sanitation, that makes the common run of mankind lose faith in those who should be conservative in advice.

COLD STORAGE.

One of the most instructive parts of the program of the A. P. H. A. was a symposium on cold storage. A great mass of data was brought together at this session—data collected from all parts of the earth, and all of which tends to show that cold storage is a powerful factor in maintaining a regular and steady supply of foods, that without it could not be had at all seasons. That cold storage can be abused is very potent—because it is abused at times is no reason for its wholesale condemnation, especially in view of its benefits. Some one said to Dr. Brice, "Cold storage ought to be prohibited." To which the doctor made reply: "Would you do away with cold storage and have apples only three months in the year while a million bushels rot? Why not carry that million bushels forward and have apples all the year? What would apples bring in the market when they are rotting on the trees? It is only after the season of congestion is over that the apple market

is such as to make it worth while to grow apples." This same line of thought can be followed out into many perishable food channels.

It is very essential that cold storage should be regulated, but not hampered. There are only half a dozen States in the union that have any cold storage regulations. It is, perhaps, unfortunate that there are so many. They have for the most part been framed rather for the purpose of punishing than improving.

The committee on cold storage recommends regulating cold storage plants, but doing it in accordance with scientific principles.

SPEAKING OF LEPROSY.

Dr. Pratt, of Honolulu, certainly did play us a joke. Sat there without opening his mouth while we aired our kindergarten views on the subject instead of telling us a few of the things that he knows. He must have been amused.

Dr. Hayne described a little incident. They had found in his State a case of leprosy of some twenty-five years' standing. Nothing had ever been thought about it till it was discovered that it was leprosy, after these years, and then it had to be quarantined. But that was in South Carolina. And Dr. Hayne says they do a good many things in South Carolina that they don't do in more civilized communities. (If there are such, we would add.)

The climax was reached when it was proposed to pass a leper through the State of Colorado. Dr. Hunter waxed eloquent, and gave assurance that no other leper should be passed through that State till "they" take out the one "they" have already left there. The assumption is there is another story right in there if it were only opened up.

When Hirschfield was mentioned that started something. Hirschfield was a leper, a millionaire, and a member of the council of Bay City, Michigan, all at the same time.

Now it seemed that Hirschfield had a kinsman in Iowa. Michigan finding this out, gallantly turned over the millionaire to Iowa, but Iowa was entirely too polite to accept him and just as gallantly returned him with all due thanks, but at the same time hinted that Michigan's courtesy had cost Iowa a little sum of six hundred dollars, which Michigan could return if it would. At last accounts Hirschfield was back at Bay City, and Michigan and Iowa still bowing and courtesying to each other over the incident.

Dr. Pratt could have told us of a colony of six hundred lepers, exiles from the rest of the world, marooned on the island of Molokai; the colony where Father Damien lived and labored and died—Father Damien, upon whose memory Dr. Hyde cast some aspersions, aspersions which caused Robert Louis Stevenson to say: "It was my inclement destiny not to know Father Damien, but Dr. Hyde"—the colony visited by Jack London on his daring trip across the ocean in the "Snark," and so pleasingly described in one of the popular journals. He could have told us of the home life of these people, their occupations, amusements; their petty strifes and social jealousies perhaps, for the difference between them and us depends upon the viewpoint—just as the vaudeville performers come to look upon the rest of the world as so much trash whose duty it is to be amused at old saws, while the world in turn remarks upon what a hard life it must be on the stage.

Dr. Pratt could have told us of the children born in the colony, and how they are immediately removed to Honolulu where they are brought up and educated, and how none of these children have ever developed leprosy, even though one or both parents may be lepers at time of birth.

He could have told us how the management of the colony by the Hawaiian government has for its object, not only the care of the individual lepers, but its gradual elimination from the islands, to which end all persons who are diagnosed as lepers are sent to the colony, regardless of age, sex or social standing; and kept there till it is considered safe to parole them; and how, under this management the number of lepers in the colony has been gradually reduced from nearly a thousand to some six hundred.

Dr. Pratt could have told us how when a leper is so much improved that he is no longer considered a danger to the public, he is not dismissed exactly, but paroled, that is he is required to report at the health office every three months, and otherwise maintains his freedom, so long as he does not lapse back into a dangerous stage.

And much more than this could Dr. Pratt have told us if he had only loosened up a little.

CONSUMPTION OF SEWAGE.

Dr. Hurty said we consume more sewage than is good for us. That statement has more strength than elegance, and more truth than either. The proof lies in the number of what we know as sewage-borne diseases, as typhoid, cholera, amoebic dysentery, bacillary diarrhoea, and possibly a number of other diseases not well defined—not only do they come

from the consumption of sewage, but from the consumption of raw sewage.

The greatest public health problem in America today is the problem of sewage disposal.

SMALLPOX RECIPROCITY.

At the offices of the Public Health Service we met two men from New Hampshire. They had been having trouble with smallpox. Cases it seems would persist in coming over from Canada and "starting something" in the United States. They wanted it stopped. That was reasonable. But how were they to do it? That was the question. They seemed to think it could be done. And what they wanted to know was *how to do it.*

To be perfectly frank, we would like to know that, too, but we have long since despaired of ever finding it out. It didn't seem to occur to them that New Hampshire was passing smallpox back to Canada, too. Now there is a case of practical reciprocity. The United States sends smallpox to Canada, and Canada in turn sends it back. Neither side ought to kick since they both come out even to say the least.

It happens this way: An unvaccinated person is exposed to smallpox, and contracts it. He doesn't know that he has contracted it. No one knows. No one can tell that he has smallpox in his system till it develops. That will be one to three weeks later. During this one to three weeks he looks as innocent as the rogue in an amateur play. Why certainly he can come from Canada, or go from New Hampshire to Canada. Why not?

There is only one way to stop it—let no one cross the line that is not vaccinated. That will checkmate it. For a vaccinated man never starts smallpox. That is out of his line.

TEXAS FEVER AMONG CATTLE.

One of the commonest diseases, and certainly the most serious, among the cattle of Florida is Texas fever. This is transmitted by the cattle tick, somewhat as malaria is transmitted by the mosquito.

Extensive experiments have shown that it is possible to exterminate ticks and in that way exterminate Texas fever. In fact the Federal Government has, for the last several years, been exterminating ticks throughout the South, and that way hundreds of thousands of acres of

good pasture has been redeemed from the tick, and made into good grazing ground for healthy cattle.

To understand the situation it is necessary to understand the life history of the tick, the life history of the Texas fever germ, and the effect that the germ has upon the cow.

Turning first to the cow, soon after a calf is born in the tick territory (and the tick territory includes most of the Southern States, except where ticks have been eradicated), it gets infested with ticks. This gives it fever. In some cases it dies. But usually it does not. It recovers after awhile, and appears to be healthy. As a matter of fact it is not healthy, for it has chronic Texas fever. Some of its blood injected into a cow that doesn't have the disease would produce it. A tick allowed to bite the calf and then allowed to bite a cow that doesn't have it would produce it.

The calf now goes on through life with a chronic disease. It doesn't grow as large as it otherwise would. It doesn't get fat as it otherwise would. It doesn't give as much milk as it otherwise would. In short it is handicapped all its life.

But more than that. It has, of course, a low grade of health all the time. But if it should get a long drive, or should become exhausted from cold, or hunger, or from any other cause, the disease might light up in an acute form, and the animal die. So in addition to being constantly handicapped, it is in constant danger.

Furthermore, it is not allowed outside of the tick territory. However much a man might desire to ship cattle from Florida say to one of the Northern States where they do not have the cattle tick, he would not be allowed to do it.

We spoke of a native calf developing Texas fever, and pointed out that it would hardly die. That is one of the characteristics of the disease. If a calf takes it early in life, he rarely dies. But if an adult cow develops Texas fever death is pretty certain. At least half that take it die, and sometimes more. For that reason cattle can't be shipped from the tick free territory into the tick territory. Too many of them die. Calves can be shipped, or cattle can be vaccinated and then shipped. But not otherwise.

A very interesting instance of Texas fever has just occurred in St. Augustine, Florida. A herd of dairy cattle down there, some seventy in number, have been pastured in small private pastures for seventeen years. They were all tick-free. There were no ticks on these private

pastures. Had been none on them in all these years. So that none of the cattle had ever had Texas fever.

Two or three years ago some four of these cattle were sent to Atlantic Beach. They promptly died of Texas fever. On another occasion some were sent to West Palm Beach. They, too, died. But the matter was never brought to the attention of any one who coupled up the facts till quite recently.

Going back to the herd in St. Augustine. A few weeks ago this herd was placed upon the golf course. When it was first suggested, the owners wouldn't do it, because there were other cattle on the golf course. The others were taken off, and this herd put on. They promptly began to die of Texas fever. Before it could be stopped, a dozen or fifteen had died.

The measures instituted to stop it were spraying the cattle with a fluid that would kill the ticks. This was rigorously kept up a few days and the disease was checked.

It is a remarkable thing that without understanding the danger of ticks, and without making any effort to protect this herd against them, they had gone seventeen years without ever getting a tick in the herd. One thing was that they had bought all hay in the North where there are no ticks. Another is that they had never added any native cattle to the herd.

But what makes it still more remarkable is the fact that the private pastures upon which the herd was kept were three or four in number, and separated, so that it was necessary to drive the cattle across the commons, and along the streets and roads, to pass them from one pasture to another. More than that, they had before (some two or three years ago) allowed the cattle to graze upon the same golf course, and yet they didn't get infected. But at that time no other cattle had been recently on it, and the presumption is that the ticks that had been dropped had all died.

TICKS.

The life history of the tick is, briefly, as follows: Beginning with the young tick, just as it leaves the egg, on the ground, it climbs up the grass, and gets onto the first cow that comes along. It buries its head in the skin and begins to suck blood. At this stage of development it is called a larva.

After eight days it changes into a what is called a pupa. But it continues to suck blood.

After another eight days it changes into what is called a nymph. Still it holds on and keeps sucking blood.

A little while later it molts, and then becomes a sexually mature tick.

From this it will be seen that the larva, the pupa, the nymph, and the adult tick suck the blood of the cow.

But after impregation the adult female tick drops off the cow and lays two thousand to four thousand eggs.

These eggs hatch in three to four weeks, turning out so many larvae to lie in wait for other cattle.

Now if the mother tick that laid these eggs had lived on a cow with Texas fever, all these young ticks would be infected, and would transmit the disease to any cow they might chance to bite.

As before indicated the Federal Government is now ready to cooperate with Florida in tick eradication. It has passed the experimental stage. It is a success. The cost is insignificant compared with the gain. The States to the north of us are all taking it up. County after county has been made tick free. In Australia they have had the work going on for years. A few weeks ago a commission from Australia visited America. They were studying Texas fever. They wanted to see some native cattle that had been infected all their lives, and for a number of generations. They were brought to Florida, where they found just what they wanted to see. For our native cattle impress strangers something like our native "razor backs" do. Some years ago a medical student registered in Jefferson Medical College of Philadelphia. When asked where he was from he said Florida. Whereupon the dean remarked: "The land of alligators and little cattle."

On December 17th to 19th inclusive a meeting will be held in Gainesville at the University of Florida to consider the matter of tick eradication. Representatives of the Federal Government will be present, and everybody in the State that is interested in stock raising, or in making this a good stock-raising State, is invited to be present and participate.

DISINFECTION AFTER CONSUMPTION.

A case is reported of a death from tuberculosis and it is desired to know what to do with the house. Bear this in mind: *That the man is safer than he has been and the house is likewise safer than it has been in months or years as the case may be.*

NOTICE.

In 1908 the State Board of Health began an active crusade against hookworms in Florida. At first it was purely educational, but by the summer of next year it was feasible to intensify the effort, placing two men in the field to hurriedly cover the State in a general canvass. At the same time the Board, recognizing that two men could not reach all parts of the State very quickly, and desiring to place treatment within the reach of every individual, however poor, and desiring to enlist the cooperation of the medical profession, and wishing to accumulate certain data which only systematic microscopical examination of hookworm sufferers would reveal, the Board proposed to pay three dollars per case to the attending physician for all indigent cases treated under certain conditions, chief of which was that the diagnosis must be confirmed by microscope and a complete case record filed with the Board. It was, at that time, the intention of the Board to cover the ground more closely after going over it cursorily, but about the beginning of 1910 smallpox began to light up, and for two years the limited field staff was entirely taken up with that disease; but, with something like 120,000 vaccinations done, largely at the strategic points, smallpox has now subsided, and the staff can give its attention to hookworm, malaria, typhoid and general sanitation. This is now under way.

During the three years that the Board has been paying for the treatment of indigent cases of hookworm, certain developments have been realized which obviate the necessity of continuing it. In the first place, the desired data has been accumulated, so that it is not necessary to pay for treatment in order to get a supply of case records, nor is it necessary to pay for the treatment to be sure that treatment will be within reach of all persons, since it is well known now that any person can have a diagnosis made simply by submitting a specimen to either of the three laboratories of the State Board of Health, without cost, and that, once the diagnosis is made, the rest is the administration of thymol, which can be purchased in proper dosage from any drug store for a few cents. But more than that, the Board is now covering the State with a system of clinics which will bring treatment within reach of every individual that desires to take advantage of it, and furthermore, will bring such a fund of information as will enable parents and others to intelligently get treatment for hookworm cases that may come under their observation in the future. In other words, the treatment of hookworm is fast resolving itself into the matter of home treatment,


TAKE 'EM AWAY!
YELLOW FEVER
HOOK WORM
PLAGUE
FLORIDA
PUBLIC HEALTH

aided and abetted by the State Board of Health and the family physician. The need, therefore, for continuing to pay for the treatment of indigent cases is vanishing. The purpose that it sought to accomplish has been realized, and henceforth this will be discontinued, the Board relying entirely upon the field force operating through dispensaries. The laboratory will continue to examine specimens as heretofore, both for physicians and private individuals, and there will be no charges, as heretofore. The dispensaries will continue to be operated, the State being covered as rapidly as is consistent with thoroughness.

A TITANIC DISASTER EVERY DAY.

"Out of some 1,500,000 deaths annually in the United States, at least 630,000 are preventable," declared Prof. Irving Fisher, of Yale, in his address before the fourth National Conservation Congress just held at Indianapolis.

"This means more than 1,700 unnecessary deaths a day, or more than the lives lost in the great Titanic disaster."

"In the last analysis the war against preventable disease is a struggle between the dollar and the death rate," E. E. Rittenhouse, of New York, declared. "And most of our communities prefer a high death rate to a slight increase in the tax rate. There is not an adequately financed health department in the country." He pleaded for more liberal support of the health service.—*The Pathfinder.*

GENIUSES AND DEFECTIVES.

Dr. Woods Hutchinson is authority for the statement that science can not produce geniuses. He says that 90 per cent. of the people are born normal, that 5 per cent. are geniuses, and 5 per cent. are defectives. He advocates that we endeavor to prevent the production of defectives, disregarding the question of producing geniuses.

Theoretically his position might be open to attack—we might be able to produce a highly developed individual in a certain direction, and when thus produced, we would call it a genius, since that is what a genius is. We might produce certain characteristics in the human being, just as Alexander Graham Bell has produced sheep with four nipples instead of two; and then six instead of four.

But from a practical standpoint Hutchinson is undoubtedly right—the most possible is to limit the number of defectives born, and that is a slow process.

YES, INDEED.

Woodrow Wilson says that the conservation of the minerals, waters, forests, etc., of America, is obviously the superficial part of the problem of conservation. The real thing that we have to conserve in America is the American people, their energy, their elasticity, their originative power, their capacity to hope, to achieve.—*Bulletin Oklahoma State Board of Health.*

DISINFECTION IN BOSTON.

"Boston records showed that after thorough disinfection there had been 1.8 per cent. infections from diphtheria, and 1.5 per cent. from scarlet fever; since the middle of July, 1911, a test has been made of doing practically no disinfecting, the materials used being only sufficient for thorough disinfection of 500 cubic feet. The rooms have then been thoroughly aired and washed. So far the incidence of new cases has not been any greater than before."—*Monthly Bulletin New York State Department of Health.*

So little by little, step by step, inch by inch, sanitation is becoming sane.

NOTICE.

For the information of Boards of Health, physicians and others who are not affiliated with the Fifteenth International Congress of Hygiene and Demography recently held in Washington:

The transactions will be complete in about four thousand printed pages. The number of copies issued will correspond to the number of advance subscriptions. The price is $5.00 a set, delivered. There will be no distribution through book sellers. Subscriptions can not be received after the first volume goes to press. Any one desiring the transaction, which include all the papers, should send five dollars to Dr. John S. Fulton, Secretary-General, New Jersey avenue and B street, N. W., Washington, D. C.

COLORED, BUT---

Gussie Williams is colored, but her clothes were white the morning she applied for Pasteur treatment. Gussie told her story of how a strange cat had sprung up and seized her wrist as she went walking down the street, and how she screamed and flung him off, and how a policeman killed him, and how the board of health said he was mad, and who told her she ought to take treatment and where to go to get it. *All this is like it usually happens.*

When the other details were arranged and Gussie was told that if she was able to pay for the treatment it would cost her $25.00, but that if she was not able to pay for it it wouldn't cost her anything. Gussie replied: "I aint as pore as some. My husband works. I'll pay for it; so's them that can't pay for it can get it free." This is like it usually doesn't happen. Respects to Gussie.

THE FENCE OR THE AMBULANCE.

'Twas a dangerous cliff, as they freely confessed,
Though to walk near its crest was so pleasant;
But over its terrible edge there had slipped
A duke, and fully many a peasant;
So the people said something would have to be done,
But their projects did not at all tally.
Some said, "Put a fence around the edge of the cliff;"
Some, "An ambulance down in the valley."

But the cry for the ambulance carried the day,
For it spread through the neighboring city,
A fence may be useful or not, it is true,
But each heart became brimful of pity
For those who slipped over that dangerous cliff;
And the dwellers in highway and alley
Gave pounds or gave pence, not to put up a fence,
But an ambulance down in the valley.

Then an old sage remarked, "It's a marvel to me
That people give far more attention
To repairing the results than to stopping the cause,
When they'd much better aim at prevention.
Let us stop at its course all this mischief," cried he.
"Come, neighbors and friends, let us rally;
If the cliff we will fence we might almost dispense
With the ambulance down in the valley."

—*Joseph Malins in Iowa Health Bulletin.*

MOTHERS CAN TELL.

The latest addition to the Murphy family was lusty twin boys. At six months of age they were as like as two peas. Neighbors often wondered how Mrs. Murphy told them apart. One day Mrs. O'Flaherty said to her: "Foine pair of boys you've got, Mrs. Murphy, but bless my soul, how do you iver till thim apart?"

"Faith, and that's aisy, Mrs. O'Flaherty," replied Mrs. Murphy. I puts my finger in Dinnis's mouth, and if he bites, it's Moike."—*Ex.*

A school boy explained the difference between climate and weather by saying:

"Climate lasts all the time, while weather lasts only a few days."—*British Medical Journal.*

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FLORIDA SHALL HAVE IT TOO!
Jacksonville
Dear Santa Claus:
Please bring us
better public
health.
Improved Sanitary
conditions and
make us a heartier
happier state.
State Board of Health
FLORIDA

SEWAGE DISPOSAL FOR RURAL HOMES.

(Publication No. 99.)

In the smaller municipalities and in rural communities privies are a necessity for two reasons: one is, as a place of seclusion, and another as the means of disposal of human excreta without detriment to public health.

Certain diseases, notably typhoid fever, hookworm, cholera, tapeworms, and some forms of dysentery, are all sewage borne, and will prevail until sewage is properly disposed of. Probably the best and most practicable method of sewage disposal for smaller municipalities and rural districts in a sandy country like Florida, is the old fashioned privy, but the privy needs just a little doctoring and a little care to keep it from being a source of sickness and a common nuisance. To keep it from being a source of sickness, it is necessary that it be made flyproof, and to keep it from becoming a nuisance, it is necessary to keep it dry. When these two features are looked after, there is little likelihood of the privy causing any disturbance one way or another. Probably the best way to make a privy flyproof is embodied in the privy ordinance of Jacksonville, as follows:

SECTION 1. All privies shall be so constructed as to prevent the access of flies to the night soil container. In order that this may be accomplished, the compartment under the seat in which stands the night soil container shall be tightly constructed of sound lumber, without cracks or crevices. Any opening into this compartment for ventilation shall be covered with wire fly screening. There shall be at the back or side of this compartment an opening for the removal of the night soil container, which opening shall be provided with a tightly fitting, let-down, board cover, hinged to the house and so constructed as to prevent the access of flies to the night soil. This cover shall be provided with a hook or button and shall always be kept closed. Where practicable, the opening shall abut on a public alley so as to be readily accessible to the city scavenger.

* * * * * * * * * * *

SECTION 3. The roof of each privy or earth closet shall be watertight and if it slopes to the rear of the house it shall project not less than six inches beyond the rear wall of the house. The doors of all privies shall be tight-fitting and self-closing, and any windows or openings for ventilation shall be covered by wire fly screens. All privies shall have at least one opening of not less than two square feet for ventilation.

SECTION 4. In case of existing privies which are not in accordance with the above rules, the owner of the property shall not be required to reconstruct the privy unless, in the opinion of the Board of Health, said privy is a menace to health, but all privies shall comply with the following minimum requirements:

* * * * * * * * * * *

(*b*) The house shall be without openings and cracks, through which flies may enter. It shall be provided with a tight self-closing door, and shall have an opening or openings for light and ventilation, which shall be screened for the exclusion of flies.

(*c*) The seat shall have a self-closing hinge cover of sufficient size to completely cover the opening or openings in the seat.

(*d*) There shall be a tightly fitting let-down, hinged cover over the box opening for the exclusion of flies.

SECTION 6. All privies shall be kept clean at all times. The door of the house shall not be allowed to remain open at any time unless there is a self-closing fly door in addition to that required under the above rules. No wash water, garbage, kitchen slops or other liquid wastes shall be emptied into the privy. No night soil from any person suffering from typhoid fever or other serious bowel trouble, shall be deposited in any privy, without being previously disinfected* in such manner as directed or approved by the City Board of Health.

The following features are to be noted: That the house must be so constructed that flies cannot get into it when the door is closed; that the door must be self-closing; that the seat must have hinged lids self-closing, and must be kept closed when not in use; and that the back shall be opened by a hinged door, which can be closed. (See Figure 1.) This, it will be observed, makes the privy flyproof. If, in addition to that, a box of dry sand or ashes is set in one corner, and every time the privy is used a scoop-full of sand or ashes is poured over it, *it will be as nearly a perfect arrangement as can be made without entailing considerable expense. As often as is necessary, then, it should be cleaned out, and the contents buried. Such a privy has the advantage of being nearly as good as the best, and cheap enough that anybody can afford it.*

A little better type of privy, but one that is a little more expensive to install and probably a little more troublesome to keep up, was

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* The excreta from typhoid patients should be buried, as it is impractical to disinfect it.

designed by Lumsden as here described and illustrated. (See Figure 2.) This is to be used where the house is without a flowing water supply, and described as follows:

1. A water-tight barrel to be used as a liquefier.

2. A covered water-tight barrel, can, or other container to receive the effluent.

3. A connecting pipe about two and one-half inches in diameter, about twelve inches long, and provided with an open "T" at one end, both openings of the "T" being covered by wire screens.

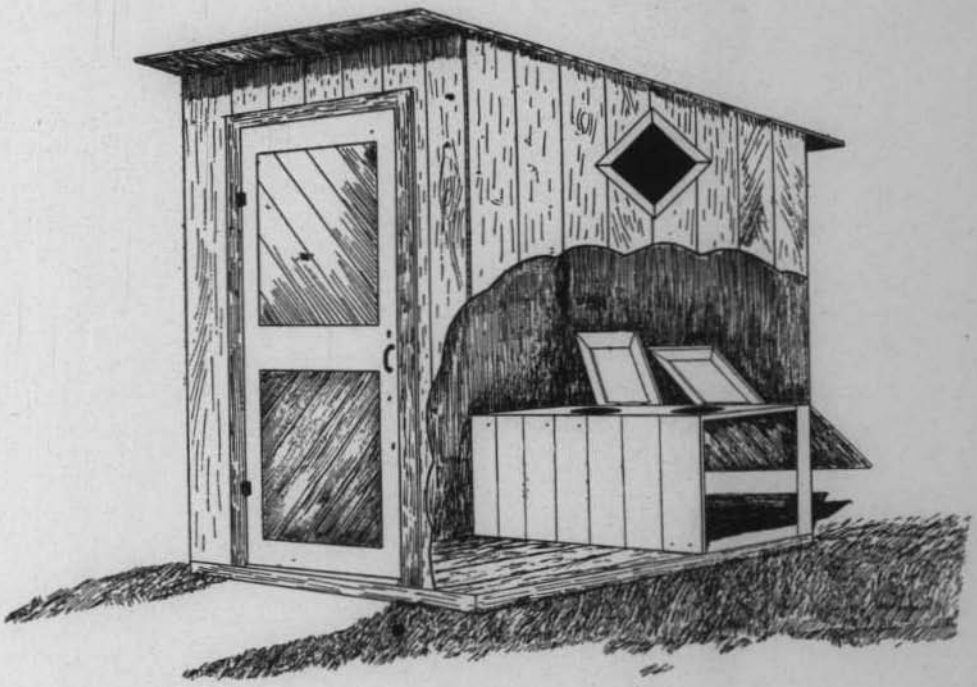

FIGURE 1.

4. A tight box, preferably zinc lined, which fits tightly on the top of the liquefying barrel; it is provided with an opening on top for the seat, which has an automatically closing lid.

5. An anti-splashing d eice consisting of a small board placed horizontally under the seat and one inch below the level of the transverse connecting pipe; it is held in place by a rod, which passes through eyes or rings fastened to the box, and by which the board is raised and

lowered. The liquefying tank is filled with water up to the point where it begins to trickle into the effluent tank.

As an insect repellent a thin film of some form of petroleum may be poured on the surface of the liquid in each barrel.

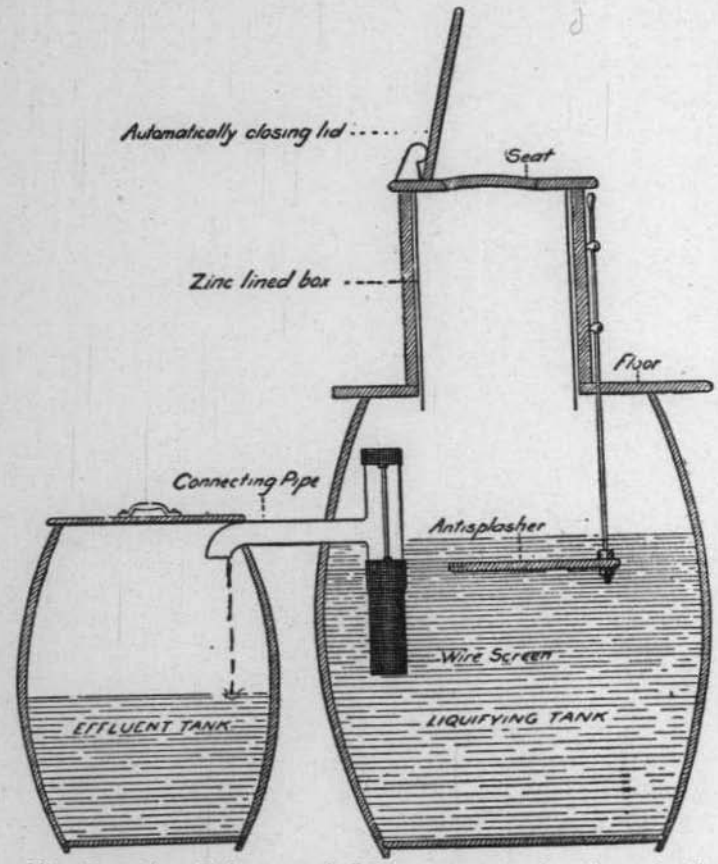

FIG. 2.—The Lumsden, Roberts and Stiles apparatus for the safe disposal of night soil. (Redrawn from Lumsden, Roberts and Stiles.)

Where there is flowing water, the septic tank is to be recommended. This is still more expensive and still more satisfactory than either of the others.

A very good illustration of a septic tank was designed by Edward D. Rich, Sanitary Engineer of the Michigan State Board of Health. (See Figure 3.) The price governing this, its description, and approximate cost, are taken from an article of the Michigan State Board of Health, as follows:

"First. Build a cesspool absolutely water-tight. It then ceases to be a cesspool, and becomes a septic tank—one of the recognized means of scientific sewage purification. In this chamber useful bacteria—nature's scavengers—are developed. These forms of plant life are of two varieties, one class living and doing their work in the presence, and the other in the absence, of light and air. The former, called aerobic bacteria, operate near the surface of the contained liquid and the latter or anaerobic forms do their work nearer the bottom of the tank. By the activity of the anaerobes, the processes of putrefaction are carried on, which convert part of the contained organic matter into liquids and gases. By the combined action of these bacteria, a reduction of about fifty per cent. of the sludge is obtained, and it is assumed that an equal removal of dangerous bacteria is effected.

"Second. The settled liquid in the tank should be drawn off at a point a little below the water level, so as not to disturb the scum which has formed. It should then be distributed into the soil near the surface of the ground where the nitrifying bacteria are most numerous. By the action of these organisms the remaining organic matter both in solution and suspension is reduced to harmless compounds very much in the same way as barnyard manure is converted into soil fertilizer when ploughed into the ground. In applying the liquid to the soil it is very important that the ground should be dosed intermittently, in order that air may follow the foul water in the pores of the earth and prevent the ground from becoming water-logged. The distribution is generally best accomplished by means of lines of sewer pipes or drain tile laid about one foot underground, with *uncemented joints*, so as to allow the liquid to pass out more or less freely. These pipes need not be straight, but should follow the contour of the ground in such a way as to have a fall of two or three inches per hundred feet, and be about one foot deep throughout their length. A single line of tile may be used for small installations in sandy soil if plenty of distance is available, but it will generally be preferable to place them in more or less parallel lines about three feet apart in sandy soil, and four or five feet apart if the ground is more compact. A small chamber should be built at the inlet of the distribution tiles to equalize the flow into the various lines. If some of the distributors are on a lower level than the others, the fall to them from the equalizing chamber should be made outside of the chamber, all outlets from which should have the same grade for a foot or two at least, to prevent some from taking more water than others. It is desirable that plugs be provided for shutting off, in the equalizing chamber, the flow to any of the distributors. In this way any section of the disposal tiles may be used at any time. For the purpose of supplying air to the pipe lines, a ventilator should be placed in the equalizing chamber, and one at the end of each line of pipe. The length of the distributors is determined by allowing one-half foot of pipe per gallon of flow expected daily, if the disposal is to be in sandy soil, and about one foot per gallon

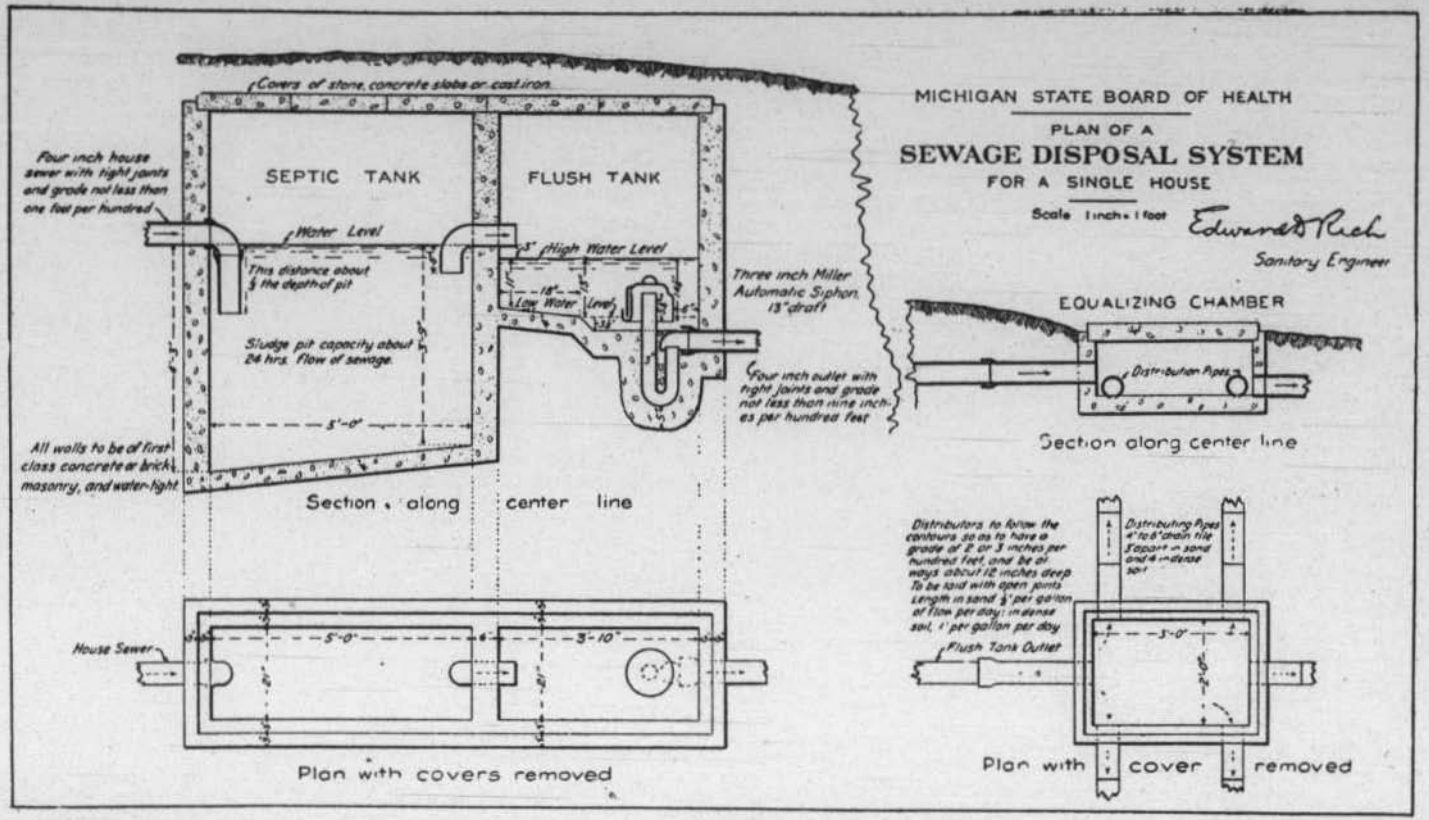
Covers of stone, concrete slabs or cast iron.
Four inch house sewer with tight joints and grade not less than one foot per hundred.
SEPTIC TANK
FLUSH TANK
Water Level
3" High Water Level
This distance about ⅓ the depth of pit
18"
Low Water Level
Sludge pit capacity about 24 hrs. flow of sewage.
5'-0"
All walls to be of first class concrete or brick masonry, and water-tight
Section along center line
Three inch Miller Automatic Siphon. 13" draft
Four inch outlet with tight joints and grade not less than nine inches per hundred feet
House Sewer
5'-0"
3'-10"
Plan with covers removed
MICHIGAN STATE BOARD OF HEALTH
PLAN OF A
SEWAGE DISPOSAL SYSTEM
FOR A SINGLE HOUSE
Scale 1 inch = 1 foot
Edward S. Rich
Sanitary Engineer
EQUALIZING CHAMBER
Distribution Pipes
Section along center line
Distributors to follow the contours so as to have a grade of 2 or 3 inches per hundred feet, and be always about 12 inches deep. To be laid with open joints. Length in sand ½ per gallon of flow per day; in dense soil, 1' per gallon per day
Distributing Pipes 4" to 6" drain tile 3' apart in sand and 4' in dense soil
Flush Tank Outlet
5'-0"
Plan with cover removed

FIGURE 3.

per day in fairly dense loam. If the ground is rather compact clay, its absorptive power may be increased by excavating the trenches about two feet wide and a couple of feet below the proposed grade, and filling in with porous material such as sand, gravel or cinders. In extreme cases it may be necessary to underdrain the disposal beds by means of pipes laid between the lines of distributors and about three or four feet deep, the flow from which may be led into a stream.

"In laying the distributors and drain tiles care should be taken not to butt the pipes too tightly together, the joints, however, should not exceed one-quarter of an inch. In sandy soil tarred paper or pieces of tile should be placed over the upper half of the joints to prevent clogging. If the disposal beds are placed near trees, it will probably be necessary to dig up and clean the tiles occasionally as roots fill them quite rapidly.

"All connections between the house and septic tank and from the septic tank to the equalizing chamber should be laid with tight joints. If cement filling is used, the joints should first be caulked with oakum or jute which has been soaked in a mixture of cement and water, after which the joint must be completely filled all around with a mortar composed of one part of clean sand and one part of the best Portland cement. If cement joints are made with great care by a skilled workman, fairly tight results may be expected if the pipe line is in a dry trench. But if much water is encountered it is almost impossible to obtain impervious joints by this method. The objections to leaky joints are, first, pollution of the ground and, second, furnishing an opportunity for tree roots to enter and clog the sewer. In using cement joints, care should be taken to wipe the inside of the pipe free from any protruding jute or mortar which would tend to obstruct the flow.

"Much more satisfactory results may be secured by using a poured joint of 'Pozite,' 'Jointite,' 'G. K. Compound' or sulphur-sand. The latter consists simply of equal parts of sulphur and very fine sand (quicksand is excellent) melted together. The operation of melting should be done on an old stove, or some arrangement by which the heat may be controlled, for when the mixture is too hot the mass gives off sulphur fumes and becomes so thick that it cannot be used. At the proper temperature it should be nearly as fluid as water. The operation of pouring a joint is the same for all these substances, and similar to the jointing of iron water pipes with lead. The joints should first be caulked with dry oakum or jute tightly enough and thick enough to prevent the jointing material from leaking into the pipe. A jointer or rubber hose or rope covered with wet clay should be placed around the body of the pipe close up against the bell of the next pipe with a small opening left at the top for pouring. After the material has cooled sufficiently the jointer is removed. By this method several lengths of pipe may be joined on the surface and lowered together into the trench as soon as the joints are cooled. This scheme

not only insures permanent and substantial construction, but, best of all, obviates the root nuisance.

"The cost of poured joints will be only a cent or two per joint above that of cement. In other words, this small sum represents the difference in expense between good work and questionable or bad work.

"Four-inch vitrified sewer pipe is the smallest practicable size which should be used for draining ordinary buildings.

"The capacity of a septic tank should not exceed twenty-four hours' flow of sewage under normal conditions, estimated on the basis of 30 to 50 gallons per person, per day. Its depth should rarely be less than four feet, and for fair sized installations about seven feet. The length should be about twice the width, in order to obtain as nearly a uniform velocity through the tank as possible, and to reduce the agitating influence of the inlet. These disturbances should be further controlled by leading the flow into the tank through an elbow in the pipe, turned downward, and extending below the water level a distance of about one-third the depth of the tank. In the case of tanks more than five or six feet wide, enough inlets of this sort should be provided so that they will not be more than four feet apart, and each deliver an equal amount of the flow. Additional diffusion may be obtained by placing a baffle board or wall across the tank close to the pipe inlets. In order to preserve uniformity of flow through the tank, the effluent should be drawn off as uniformly as possible along the outlet end. For tanks less than three or four feet wide, this may be accomplished by a single pipe equipped with an elbow to a depth of six or eight inches, below the water level, to prevent the escape of scum. With tanks more than three feet wide better results may be obtained by building a concrete trough on the inside of the end wall, over one side of which the escaping liquid flows in a thin sheet. The top of this side should be perfectly level and so rounded and made smooth as to prevent accumulations forming to obstruct the flow. The bottom of the trough should be given a pitch of two or three feet per hundred toward an outlet pipe at one end or in the middle as preferred. In front of, and about three inches away from the side of the trough, or outfall weir, should be placed a baffle wall or board to prevent the escape of scum and extending eight or ten inches above and below the water level.

"It is preferable to build the bottom of the septic tank on a grade of three or four per cent. to facilitate cleaning. In large tanks the bottom slopes should terminate in gutters leading to a sludge drain pipe.

"The liquefying action of the tank bacteria above mentioned is often spoken of as a digestive or dissolving operation, and accounts for the fact that septic tanks need cleaning at much less frequent intervals than do cesspools where no proper habitation for liquefying bacteria is provided. A septic tank should be cleaned only when sludge has accumulated to such an extent to give trouble by escaping into

the disposal tiles. The best way to clean a small tank is by pumping from the bottom and thus removing the oldest sludge first. If this plan is pursued it is best to remove only about one-half or two-thirds of the accumulations at a given time, the overlying liquid, of course, being allowed to remain. The sludge may be disposed of by ploughing into the soil or by dumping into large bodies of water at a point well removed from a water supply.

"The capacity of the flush tank should be equal to about four to six hours' normal sewage flow, thus providing for dosing the disposal beds from four to six times in twenty-four hours. The depth of the water which the flush tank may contain before discharging will be governed by the size and type of flushing syphon used and its horizontal dimensions may be any convenient lengths to give the required capacity. The nearer square the chamber is built, the more economical it will be to construct. For ordinary installation, a three-inch Miller automatic syphon may be used. These are made by the Pacific Flush Tank Company of Chicago, and having no moving parts, require very little attention for their maintenance. If another size is used the catalogue of the company should be consulted, to obtain the corresponding discharging depth of water to be provided for. The top of the flush tank should be removable for the purpose of inspection and cleaning around the syphon to insure regularity of discharge. In setting the flushing device, it should be held firmly in place by plenty of concrete, and great care taken to have the vertical syphon pipe exactly plumb, and the bottom of the bell placed at precisely the required height. After the work is completed, a pail or two of water should be poured into the vertical leg of the syphon.

"For small plants the covers of the septic tank and flush tank may be made of flag stones, concrete slabs, or cast iron plates in small units, so as to use planks for this purpose, as they are not durable under such conditions. In large installations the tops may be moulded in place and access provided by means of plenty of manholes.

"If the structures are to be placed in a lawn the tops may be covered with earth and the surface seeded or sodded and any exposed parts screened by shrubs if desired. It will be well in case tight covers are employed to provide a vent for the septic tank. This may consist of cast-iron soil pipe, or galvanized roof leader pipe, extending fifteen or twenty feet above ground alongside a building or tree.

"Reference to the accompanying plan will illustrate the points brought out above.

"The cost of a disposal plant complete, of the size shown on the plan, ought not to exceed $150.00 under ordinary circumstances. This, of course, is somewhat more expensive than a cesspool, but the saving in the cost of cleaning will go far toward equalizing the difference, and the remainder will be a small amount indeed to pay for safety to public and private health."

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